

Table S1. Types of *HSD3B2* pathogenic variants, biochemical and clinical parameters in female patients reported in the literature.

| Case n. | Genotype/variants | Age at presentation | Phenotype | | Hormone levels | | | Reference |
|---------|-------------------|---------------------------------|-----------|---|---|---------------------------------|----------------------------------|-----------|
| | | | Adrenal | DSD | 17Prog/ Δ4A/T/17Preg/DHEA/DHEA-S (nmol/L) | ACTH / F (pmol/L- nmol/L) | Renin / Na / K (pmol/L-mEq/L) | |
| 1 | A10E/A10E | 3 weeks 4 months | SW | Normal genitalia | B: 302.6/ nd / nd / 772.8 /nd / nd B: 127.3 / nd / 2.9 / nd / nd / 13,400 | 99.0 / 772.8 96.4 / 227.8 | nd / 122 / 9.0 nd /129 / 6.3 | [11] |
| 2 | E25X/E25X | Neonatal period | SW | Clitoromegaly | NA | NA | NA | [14] |
| 3-12 | c.35G>A/c.35G>A | The majority detected by CAH NS | SW | Normal genitalia; postnatal PCOS/ hirsutism | NA | NA | NA | [15] |
| 13 | A82T/A82T | 31 years | NSW | Normal genitalia | NA | NA | NA | [16] |
| 14 | A82T/A82T | 5 years | NSW | Premature Pubarche (PP) | NA | NA | NA | [16] |
| 15 | A82D/W230X | 14 days CAH NS | SW | Normal genitalia § | B: 760 / 53 / >55 /640.6 / 5.8 / nd | 180 / 400 | 600 / 127 / 6.0 | [17] |
| 16 | G129R/P222Q | 7 years | NSW | Normal genitalia; PP at 7 years | B: 3.0/ 1.7 / 0.4 / 69 /19.1 / 0.8 S: 2.1 / 3.5 / nd / 339 / 30.2 / nd | B: nd / 300 S: - / 500 | NA | [41] |
| 17" | G129R/P222Q | 6.7 years | NSW | Normal genitalia; PP at 6.7 years | B: 8.5 / 1.4 / 1.3 / 90 / 18 / 500 S: 23.0 / 1.7 / nd / 351 / 29 / nd | B: nd / 500 S: - /700 | NA | [41] |
| 18 | G129R/ n.6551G>A | 8 years | NSW | Normal genitalia; PP at 4 years | B: 4.6 / 4.9 / nd / 103 / 108.4 / nd S: 12.8 / 6.3 / nd / 294 / 115.0 / nd | NA | NA | [12,46] |

| | | | | | | | | |
|-----|----------------------|---------------------|-----|---|--|----------------------------|------------------|------------|
| 19 | E142K/ Stop373C | CAH NS | NSW | Normal genitalia; PP at 5 years | B: 19.1/ 1.75 / nd /180/ 29.3/ nd S: 35.1 / 2.3 / nd / 760 / 72.4 / nd | B: nd / 390 S: - / 750 | NA | [21,46] |
| 20 | W171X/W171X | 13 days | SW | Normal genitalia hyperpigmentation | NA | NA | NA | [10] |
| 21" | W171X/W171X | 24 days | SW | Normal female hyperpigmentation | NA | NA | NA | [10] |
| 22 | W171X/ A168Vfs *6 | 8 days – CAH NS | SW | No genital virilization | B: 124 /nd / nd / nd / nd/ 12,000 S: 24.6 / 4.0 / nd / 235.8 / 23.1 / nd | 549ng/L / 92 | 116pg/mL/136/5.8 | [18–20] |
| 23 | L173R/L173R | 2 years | NSW | Normal female | NA | NA | Na | [22] |
| 24 | T181I/c.1105delA | 7.6 years | SW | PP; growth accel.; No genital virilization | B: 27.3 / 4.4 / 1.5 / 275.1 / 37.0 / 6898 S: 24.6 / 4.0 / nd / 235.8 / 23.1 / nd | B: 46 /373 S: nd / 293 | 317 | [23] |
| 25" | T181I/c.1105delA | 3.6 years | SW | No genital virilization | B: 34.7 / 3.8 / 0.8 / 210.4 / 11.9 / 5825 S: 30.9 / 3.6 / nd / 141.3 / 13.7 / nd | B: 81 / 551 S: nd / 421 | 1750 | [23] |
| 26 | Y190C/S218P | CAH NS | SW | Clitoromegaly; labial fusion | B: 66.6 / 3.91 / nd / 910 / 263/ nd | 32.5/193.0 | 34.4*/139/5.1 | [24] |
| 27 | L205P/L205P | 11 months | SW | Hyperpigmentation; mild clitoromegaly | B: elevated 17preg /17OHP ratio | Elevated ACTH | NA | [25] |
| 28 | P222Q/P222Q | 1 month 7 months | SW | Mild clitoromegaly; first diagnosis 21- hydroxylase deficiency | B: 5.6/ nd / nd / 195.2 / nd / nd | NA | NA | [13] |
| 29 | P222T/P222T | 4 weeks | SW | No genital virilization | B: 184 / 48 / nd / 1102 /385.5/ nd | NA | NA | [21,46,48] |

| | | | | | | | | |
|----|-----------------------|-----------|-----|---|---|---------------------------|-------------|------------|
| 30 | P222T/P222T | CAH NS | SW | No genital virilization | 181/-/-/292 | | | [21,46,48] |
| 31 | G250V/G250V | 7 months | SW | Postnatal clitoromegaly, precocious pubarche | B: 427.2 / 40.8 / 12 / nd / nd / 143,000 | 635.4/132.5 | 10.05/135/5 | [26] |
| 32 | Y254D/ not found | Puberty | NSW | Primary amenorrhea, Mild clitoromegaly and hirsutism, enlarged polycystic ovaries | B: 91.3 / 17.1 / nd / 968.5 / 270.7/ 32.8 | nd / 228.9 | NA | [27-29] |
| 33 | T259M/T259M | 41 years | NSW | Clitoromegaly, severe virilization | B: nd / 70.2 / 23.0 / 234.4 / 901.0 / 55,900 | B: 137 / nd | | [30] |
| 34 | T259M/T259M | 7.8 years | NSW | PP at 3 years, mild clitoromegaly | B: 3.6 / 3.8 / 1.6 / 153 / 35/ 4.6 S: 24.5/ 4.2 / nd / 147 / 38/ nd | B: nd / 100 S: - / 100 | NA | [31,32,41] |
| 35 | T259R/T259R | 2 weeks | SW | Normal genitalia with severe pigmentation | NA | NA | NA | [13,33] |
| 36 | c.273 delAA/c.318delA | 10 days | SW | Mild clitoromegaly, PP at 7 months | 8 years (Rx) B: <0.15 / <0.18 / <0.17 / 0.39 / 1.37/ <140 S: <0.15 / <0.18 / <0.17 / 1.38 / 1.65 / <140 | B: nd / 110 S: nd / 80 | NA | [34] |
| 37 | N323K/N323K | 11 days | SW | No genital virilization | B: 784 / >41 / 1.07/ nd / nd / nd | NA | /128/6.8 | [35] |

| | | | | | | | | |
|-----|--------------|-------------------|----|---|---|-----------|-------------------|------|
| 38" | N323K/N323K | 7 days | SW | No genital virilization | B: 987 / nd / 0.58 / nd / 2,562 / nd | 197 / nd | / 129 / 5.7 | [35] |
| 39 | Q334X/Q334X | 13 days CAH NS | SW | Normal female | B: 185.8°-82.3/ 84.1 / nd / nd / 0.55 / nd S: DHEA 2.53 | nd / nd | 27.4*/135/6.8 | [36] |
| 40" | Q334X/Q334X | 28 days 1 year | SW | Normal female | B: nd / nd/ 5.1 / nd / nd / nd | nd / 25.3 | nd/ 109 / 8,94 | [36] |
| 41 | Q334X/ Q334X | 25 days | SW | Normal female | B: DHEAS >100 | NA | nd / 135 / 7.7 | [37] |
| 42 | Q334X/ Q334X | CAH NS 8 years | SW | Normal female; focal segmental glomerulonephritis | NA | NA | NA | [37] |
| 43 | Q334X/ R335X | 2 months | SW | Normal female | B: nd / nd / nd / 31.3 / nd / nd | 78.3 / nd | nd / 120 / 5.9 | [37] |

": sister of the case reported in the above line, respectively; SW: salt wasting; DSD: genital phenotype; CAH NS: neonatal screening for CAH; 17Prog: 17OH-progesterone; Δ4A: androstenedione; T: Testosterone; 17Preg: 17OH-Pregnenolone; DHEA/-S: dehydroepiandrosterone/-sulphate; F: cortisol; B: basal level; S: post 60' ACTH test (250 μg iv) level; * Plasma Renin Activity (PRA): μg/L/h; ° paper disc assay; nd: not done; Rx: treated with low dose Hydrocortisone; §virilization after therapy withdrawal.

Table S2. Types of *CYP11B1* pathogenic variants, biochemical and clinical parameters in 46,XX patients reported in the literature.

| Case n. (#) | Genotype/variants | Age at presentation (yrs.) /Country of origin | Phenotype | | | Steroid hormone levels | | Ref. |
|----------------|---|--|--------------------------|---------|---------------------------|------------------------|-------------------|-------|
| | | | age at BP measure (yrs.) | SBP/DBP | DSD (Prader) | DOC (nmol/L) | S (nmol/L) | |
| 1 ARG1 A | R43Q; A386V; R453W/ CYP11B2-CYP11B1 chimera | 0/Caucasian | 0.25 | 98/56 | Atypical genitalia (4) | ND | 433 | [146] |
| 2 ARG1 B | R43Q; A386V; R453W/ CYP11B2-CYP11B1 chimera | 0/Caucasian | 0.333 | 100/75 | Atypical genitalia (4) | ND | 86.3 ¹ | [146] |
| 3 BRA1 | Q356X/Q356X | 1/Brasil | 36 | 160/110 | Atypical genitalia (ND) | ND | 909 | [146] |
| 4 BRA2 | G267S/G267S | ND/Brasil | 6 | 100/60 | Atypical genitalia M‡ (5) | ND | 54.8 | [146] |
| 5 BRA3 | R404Pfs*18/R404Pfs*18 | 0/Lebanon | 11 | 140/110 | Atypical genitalia (3) | ND | 333.7 | [135] |
| 6 CAN3 | c.1200+1G>A/c.1200+1G> | 2.5/Arabic Pakistani | 2.5 | 118/57 | Virilization (2) | 52 | 964 | [146] |
| 7 EGY1 | R347Q/R347Q | 0 /Caucasian/Egypt | 3 | 70/50 | Atypical genitalia M‡ (4) | ND | 520 | [146] |
| 8 EGY2 | G446V/G446V | 0 /Caucasian/Egyptian | 1 | 94/70 | Atypical genitalia (4) | ND | 517 | [146] |
| 9 EGY3 | G446V/G446V | 0.08/Caucasian/Egyptian | 0.5 | 90/60 | Atypical genitalia (4) | ND | 78 | [146] |

| | | | | | | | | |
|-----------------|--|-------------------------|-------|---------|---|-----|-----|-------|
| 10 EGY4 | G446V/G446V | 0.08/Caucasian/Egyptian | 1 | 90/50 | Atypical genitalia (3) | ND | 78 | [146] |
| 11 EGY6 | R448H/R448H | 0/Caucasian/Egyptian | 1 | 75/55 | Atypical genitalia M‡ (4) | ND | 465 | [146] |
| 12 EGY8 | R448H/R448H | 3/Caucasian/Egyptian | ND | ND | Atypical genitalia M‡ (5) | N/A | 548 | [146] |
| 13 EGY9 | N133H/T319M | 0.16/Caucasian/Egyptian | 0.333 | 83/53 | Atypical genitalia (4) | ND | 468 | [146] |
| 14 IRN1 | R43Q/A386V | 0/Persian, Iranian | 0.75 | 170/90 | ND (4) | ND | ND | [146] |
| 15 IRN4 | R448C/R448C | 1.83/Persian, Iranian | 2.16 | 160/100 | ND (4) | ND | ND | [146] |
| 16 IRN8 | V252ins3nt/V252ins3nt 46,XX (83%)/45,XO (17%) | 0/Persian, Iranian | ND | ND | Atypical genitalia M‡ (5) | ND | ND | [146] |
| 17 IRN31 | W116C/W116C | 0/Persian, Iranian | 12.42 | 170/110 | Atypical genitalia (4) | ND | ND | [146] |
| 18 SAU1 A | H465L/H465L | 0/Saudi | 0.5 | 105/78 | Atypical genitalia (3) | ND | 107 | [146] |
| 19 SAU2 A | Q19Afs*21/Q19Afs*21 | 14/Saudi | 11 | 126/69 | 46,XX M (5) Family screen as his sister was diagnosed | ND | 520 | [140] |
| 20 SAU2 B | Q19Afs*21/Q19Afs*21 | 10/Saudi | 2.66 | 95/48 | 46,XX M (5) Family screen as his sister was diagnosed | ND | 476 | [140] |

| | | | | | | | | |
|-----------------|---------------------|-------------------------|--------|------------------|---|----|-----|-------|
| 20 SAU2 C | Q19Afs*21/Q19Afs*21 | 16/Saudi | 16 | 140/88 | 46,XX M† (4) Breast Tanner IV, short stature, hypertension | ND | 219 | [140] |
| 21 SAU4 A | R448P/R448P | 7/Saudi | 9 | 103/69 | Clitoromegaly, diagnosed at birth with 21OHD (1) | ND | 37 | [146] |
| 22 SAU4 B | R448P/R448P | 0/Saudi | 0.069 | 97/74 | Clitoromegaly (1) | ND | 670 | [146] |
| 23 SAU6 | W260X/W260X | 1.33/Saudi | 0.5833 | 98/65 | Atypical genitalia (4) | ND | 621 | [146] |
| 24 SAU7 | G206V/G206V | 1.08/Saudi | 1.25 | 106/46 | Atypical genitalia (3) 46,XX sex ND | ND | 214 | [146] |
| 25 TUN1 | S217Ifs*42/S217Ifs* | 0/Arab-Berber/Tunisian | 2 | 120/90 | Atypical genitalia (3), melanoderma 46,XX sex ND | ND | 387 | [138] |
| 26 TUN2 A | G379V/G379V | 0/Arab-Berber/Tunisian | 2 | 120/60 | Atypical genitalia (ND), hyperpigmentation; 46,XX sex ND; | ND | ND | [146] |
| 27 TUN2 B | G379V/G379V | 0/Arab-Berber/Tunisian | 6 | 140/100 | Atypical genitalia (ND), 46,XX sex ND | ND | ND | [146] |
| 28 TUN3 A | G379V/G379V | 0/ Arab-Berber/Tunisian | ND | Normotensi ve | Atypical genitalia (ND), 46,XX sex ND | ND | ND | [146] |

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|-----------------|-------------|--------------------------------|-------|--------|---|----|-------|-------|
| 29 TUN3 B | G379V/G379V | 0/ Arab-Berber/Tunisian | ND | ND | Atypical genitalia (ND), hyperpigmentation, virilization 46,XX sex ND | ND | ND | [146] |
| 30 TUN4 B | G379V/G379V | 1.08 /Arab- Berber/Tunisian | 3 | 135/90 | Atypical genitalia (3), precocious puberty, 46,XX sex ND | ND | ND | [146] |
| 31 TUN5 A | G379V/G379V | 0/Arab-Berber/Tunisian | ND | ND | Atypical genitalia (4) 46,XX sex ND | ND | ND | [146] |
| 32 TUN6 | G379V/G379V | 0/Arab-Berber/Tunisian | ND | ND | Atypical genitalia (ND), hyperpigmentation, 46,XX sex ND | ND | ND | [146] |
| 33 TUN7 | G379V/G379V | 0/Arab-Berber/Tunisian | ND | ND | Atypical genitalia (4) 46,XX sex ND | ND | ND | [146] |
| 34 TUN8 A | G379V/G379V | 0/Arab-Berber/Tunisian | ND | ND | Atypical genitalia (ND) 46,XX sex ND Died at 4 months of age | ND | ND | [146] |
| 35 TUN9 A | G379V/G379V | 0/Arab-Berber/Tunisian | ND | ND | Atypical genitalia (ND) 46,XX sex ND | ND | ND | [146] |
| 36 TUR1 | R141X/R141X | 0.41 /Caucasian/Turkish | 0.416 | 90/40 | Atypical genitalia (4) | ND | 289 a | [146] |
| 37 TUR2 | R141X/R141X | 4.2/Caucasian/Turkish | 4.3 | 120/80 | Accelerated growth, penis enlargement, pubic hair (5); 46,XX M | ND | 289 | [146] |

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|-----------------|-------------|------------------------------------|------|---------|--|-----|-------|-------|
| 38 TUR4 | L299P/L299P | 2.7/Caucasian/Turkish | 2.7 | 160/110 | Penis enlargement, pubic hair, nonpalpable gonads (5); 46,XX M | ND | 1,045 | [146] |
| 39 TUR5 A | L299P/L299P | 2.2/Caucasian/Turkish | ND | ND | Atypical genitalia (5) 46,XX M‡ | ND | 852 | [146] |
| 40 TUR8 A | G446S/G446S | 4.9/Caucasian/Turkish | 4.9 | 80/60 | Premature adrenarche after index case (her brother) (4) | ND | 517 | [146] |
| 41 USA1 A | A331V/A331V | 0/Sephardic Jewish/Egyptian | 0 | 76/45 | Sibling/atypical genitalia (4) 46,XX M‡ | 4.4 | ND | [146] |
| 42 USA1 B | A331V/A331V | 1.16/Sephardic Jewish/Egyptian | ND | ND | Atypical genitalia (3) | 267 | ND | [146] |
| 43 USA2 | A331V/A331V | 0/Sephardic Jewish, Turkish/Syrian | ND | ND | Atypical genitalia (4) | 2† | 170 | [146] |
| 44 USA3 | A331V/A331V | 0/Sephardic Jewish, Syrian | 3.42 | 110/60 | Atypical genitalia (3) | 31 | ND | [146] |
| 45 USA4 | A331V/A331V | 0/Sephardic Jewish/Egyptian | ND | ND | Atypical genitalia (ND) | 4† | ND | [146] |
| 46 USA6 A | T318M/T318M | 0/Yemeni | 1.02 | 110/65 | Atypical genitalia 4 | 61 | ND | [146] |

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|------|---------------------------|-----------------------------------|--------|---------|--|------|-------|-------|
| 47 | T318M/T318M | 0/ Yemeni | 0 | 80/50 | Sibling/atypical genitalia 4 | 16 | ND | [146] |
| USA6 | | | | | | | | |
| B | | | | | | | | |
| 48 | T318M/T318M | Prenatal /Yemeni | ND | ND | Sibling (1§) | 5† | ND | [146] |
| USA6 | | | | | | | | |
| C | | | | | | | | |
| 49 | L106Pfs*18/T318M | 0/German, Dutch/Canadian Dutch | 2 | 101/62 | Atypical genitalia (3) | 7 | ND | [146] |
| USA7 | | | | | | | | |
| 50 | F406Pfs*15/F406Pfs*15 | 0/Mexican | 0.0055 | 67/38 | Atypical genitalia (ND) | 1.1† | ND | [146] |
| USA8 | | | | | | | | |
| A | | | | | | | | |
| 51 | F406Pfs*15/F406Pfs*15 | 0/Mexican | 0.0055 | 61/35 | Atypical genitalia (ND) | 38 | 1,152 | [146] |
| USA8 | | | | | | | | |
| B | | | | | | | | |
| 52 | F406Pfs*15/F406Pfs*15 | 0/Mexican/Mexican | 0.0027 | 73/44 | Atypical genitalia (3) | 7 | 58 | [146] |
| USA9 | | | | | | | | |
| | | | | | 46,XX M† | | | |
| 53 | Q365X/G444D | 0 African American | 12 | 150/90 | Atypical genitalia (2) | 28 | ND | [132] |
| USA1 | | | | | | | | |
| 1 | | | | | | | | |
| 54 | K254_A259del/K254_A259del | N/A/Kwait | 11 | 140/100 | Atypical genitalia (5) | | | [136] |
| | | | | | 46,XX M | | | |
| 55 | P159L/P159L | 7/East German | ND | ND | Premature pubarche (1) | | | [136] |
| | | | | | | | | |
| 56 | IVS4ds-1G >A/IVS4ds-1G >A | 5/ Brazil | 5 | High | Atypical genitalia (2) and precocious puberty, | 63 | 92 | [150] |

| | | | | | | | | |
|----|-----------------|--------------|-----|-----------------------|--|------|------|-------|
| 57 | Q356X/Q356X | 0.7/Brazil | 0 | normal | Atypical genitalia (3) and salt wasting | ND | 72 | [150] |
| 58 | Y197H/R353Q | 23/China | 13 | 180/120 | Normal female (1) | ND | ND | [147] |
| 59 | R143W/A306V | 6/Italy | ND | ND | Normal female (1); acne, accelerated growth, adv. BA | ND | ND | [142] |
| 60 | L299P/R332Q | 5,5/Italy | 5.6 | 100/65 | Normal female (1); premature pubarche | 324s | 294s | [142] |
| 61 | E310K/L299P | 0.36/Italy | 1 | 80/50 | Atypical genitalia (3) | ND | 754† | [142] |
| 62 | Q356X/A306V | 0.24/Italy | 10 | 110/70 | Atypical genitalia (3) | ND | 951† | [142] |
| 63 | I318R/IVS6-1G>C | 0/Italy | | | Atypical genitalia (4) | 766† | 165† | UC |
| 64 | R384X/Q356X | 2.6/Colombia | 2,6 | >99 th pct | Atypical genitalia (5) 46,XX M | High | ND | [144] |

(#) The code that follows "case n." refers to the original list of patients included into the corresponding reference. BA, bone age; BP, blood pressure; CA, chronological age; DBP, diastolic blood pressure; DOC, 11-deoxycorticosterone; N/A, not applicable; ND, not determined; S, 11-deoxycortisol (compound S); SBP, systolic blood pressure; SD, standard deviation. UC, unpublished case. †On medication. ‡Reassigned to female after being reared as male. §Prenatally treated.

Table S3. Genotype/Phenotype spectrum in CYP19A1 deficient females who were prepubertal or pubertal at diagnosis (from Belgorosky A et al, [158] modif.).

| Case n. | Genotype/variants | Aromatase activity (%) | Presentation | Phenotype | | Pituitary-gonads axis | Ref. |
|---------|-----------------------|------------------------|--------------|--|---------|---|-----------|
| | | | | Mother; | patient | | |
| 1 | IV6+2T>C/IV6+2T>C | <0.3 | prepubertal | Maternal virilization; Atypical genitalia at birth; | | ↑ androgens in cord serum | [159,160] |
| 2 | R435C/ C437 Y | 1.1/0 | pubertal | Maternal virilization (?); Atypical genitalia at birth; Puberty absent; Ovarian cysts and virilizing signs at pubertal age | | ↑ FSH ↑ androgens in childhood | [161,162] |
| 3 | R375C/R375C | 0.2 | pubertal | Maternal virilization; Atypical genitalia at birth; Puberty absent; Ovarian cysts and virilizing signs at pubertal age | | ND | [163] |
| 4 | R457X /R347X | - | prepubertal | Not detailed phenotype reported | | ND | [161] |
| 5 | P408fsx445 /IVS3+1G>A | 0 | prepubertal | Maternal virilization; Atypical genitalia at birth; Ovarian cysts during childhood | | ↑ androgens in cord serum ↑ FSH ↑ androgens in childhood | [165] |
| 6 | V370M/V370M | - | prepubertal | Maternal virilization (?); Atypical genitalia at birth | | ND | [166] |
| 7 | c.628G>A/E412fsX445 | - | prepubertal | Maternal virilization; | | ↑ LH, FSH ↑ androgens in infancy | [167,168] |

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|-----------|----------------------|---------|-----------------------------|--|---|-------|
| | | | | Atypical genitalia at birth; Bone age delay; Spontaneous puberty; Ovarian cysts and virilizing signs at pubertal age; Metabolic syndrome | | |
| 8 | R435C/R435C | 0.7-1.5 | pubertal | Maternal virilization; Atypical genitalia at birth; Bone age delay; Spontaneous puberty; Ovarian cysts | ↑ FSH ↑ androgens in childhood | [169] |
| 9, 10 | F234del/F234del | 16-19 | a.prepubertal b.pubertal | a.Atypical genitalia at birth b.Atypical genitalia at birth; Bone age delay; Spontaneous puberty; Ovarian cysts | - | [169] |
| 11 | EX5del/EX5del | - | pubertal | Atypical genitalia at birth; Bone age delay | Low androgen levels | [169] |
| 12 | M85R/IVS5-1G>A | 0 | prepubertal | Maternal virilization; Atypical genitalia at birth; Bone age delay; Puberty absent; Virilizing signs at pub. age | - | [170] |
| 13 | -41 C>T/p.N411S | 0 50 | prepubertal | Maternal virilization; Atypical genitalia at birth; Bone age delay | Normal LH, FSH, androgens in childhood | [171] |
| 14, 15 | p.Trp141* /p.Trp141* | 0 | prepubertal | Maternal virilization; Atypical genitalia at birth | ↑ FSH, normal androgens in childhood | [180] |

| | | | | | | |
|-----------|--|----|-------------|---|---|-------|
| 16 | R192H/R192H | 19 | prepubertal | Atypical genitalia at birth | ↑ androgens at birth ↑ FSH, normal androgens in childhood | [172] |
| 17 | pAla306_Ser314dup (homoz. or hemiz) | - | adult | Atypical genitalia at birth; Puberty absent; Metabolic syndrome | ↑ LH, FSH, ↑ androgens | [173] |
| 18, 19 | c.628G>A/c.628G>A | - | pubertal | Atypical genitalia at birth; Bone age delay; Spontaneous puberty; Ovarian cysts | ↑ LH, FSH, ↑ androgens | [174] |
| 20 | c.574C>T/c.574C>T | 0 | prepubertal | Maternal virilization; Atypical genitalia at birth | ↑ FSH, normal androgens in childhood | [174] |
| 21 | c.574C>T/c.1369C>T | - | pubertal | Atypical genitalia at birth; Bone age delay; Spontaneous puberty; Ovarian cysts | ↑ FSH, normal androgens in childhood | [174] |
| 22 | c.628G>A/c.242A>G | - | prepubertal | Maternal virilization; Atypical genitalia at birth; Bone age delay | ↑ FSH, normal androgens in childhood | [174] |
| 23 | IVS9+5G>A/IVS9+5G>A | - | prepubertal | No maternal virilization; Atypical genitalia at birth; Bone age delay; Spontaneous initial puberty; Ovarian cysts | ↑ LH, FSH, early pubertal basal estradiol levels at 13.5 yrs. | [175] |
| 24 | c.264delG/23-bp insertion | 0 | prepubertal | Maternal virilization; Atypical genitalia at birth (Prader 4); bone age delay | ↑ FSH, normal androgens in childhood | [176] |

| | | | | | | |
|----|-------------------------|---|-------------|---|--|-------|
| 25 | c.568insC/c.568insC | 0 | prepubertal | Maternal virilization, death during labor (acute hemolysis); Atypical genitalia at birth (Prader 2); severe cerebral palsy, failure to thrive | Normal LH, FSH, normal androgens | [177] |
| 26 | c.568insC/c.568insC | 0 | prepubertal | Maternal virilization; Atypical genitalia at birth (Prader); hypoplastic ovaries | ↑ LH, FSH, normal androgens | [177] |
| 27 | c.568insC/c.568insC | 0 | prepubertal | Maternal virilization; Atypical genitalia at birth (Prader 3); | ↑ LH, FSH, normal androgens | [177] |
| 28 | c.1263+1G>T/c.1263+1G>T | 0 | adult | Atypical genitalia at birth; grown as a male; streak gonads; | ↑ LH, FSH, T at normal female levels | [179] |
| 29 | c.744-2A>G/c.744-2A>G | 0 | prepubertal | Maternal virilization; Atypical genitalia at birth (Prader 4) | ↑ FSH ↑ androgens in infancy ↑ FSH, normal androgens in childhood | [179] |

ND, not determined.

Table S4. Genotypes, plasma steroid hormone profiles and clinical features of reported patients with 46,XX karyotype and PORD.

| Case n. | Genotype/variants | Age at presentation (yrs.)/ Country of Origin | Phenotype | | | | Steroid hormone levels (nmol/L) | | | | | | Ref. | |
|---------|-------------------|--|-------------|-----------------|---------|---------|---------------------------------|-------------|----------|---------|----------|------------------|--------|-------|
| | | | DSD Pt°/M'' | Skeletal Abn..^ | F basal | F peak | 17OH P basal | 17OH P peak | DHEA | DHEA S* | A | T ; E2* | | |
| 01 | 731+1G→A/R357H | 0./Japan | Y/Y | Y | L (229) | L (287) | H | na | na | na | na | na | na; L | [183] |
| 04 | C569Y/V608F | 23/Brazil | N/na | N | N (386) | L (469) | (25)# H (17) | H (42) | na | na | L (0.7) | N (0.9) ; na | | |
| 01 | R457H/A287P | 16/Poland | Y/N | M | L (290) | L (436) | H (26) | H (53) | na | N (5.7) | N (2.6) | na; L (53) | [180,1 | |
| 03 | C569Y/I181D | 0/Germany | Y/na | M | L (291) | L (280) | N (5.0) | na | na | N | N | N ; na | 82] | |
| 16 | A287P/ NF | 0./UK | Y/na | Y | N (220) | L (534) | H (43) | na | na | na | na | na ; na | [184] | |
| 03 | Y578C/I444fsX449 | 0.5 /Japan | Y/na | Y | N (295) | L (350) | H (33) | H (63) | L (0,7) | na | N (1.7) | H (1.7); N (48) | [189] | |
| 06 | R457H/R457H | 2.0/ Japan | Y/na | M | N (287) | L (397) | H (15) | H (97) | L (<0.3) | na | N (1.0) | N (0.3); L (<36) | | |
| 07 | R457H/ NF | 6.7/Japan | P/na | Y | N (228) | L (196) | H (24) | H (41) | N (3.1) | na | L (<0.3) | N (<0.3); L | | |
| 08 | R457H/R457H | 8.9/Japan | Y/na | M | N | L (289) | H (19) | H | na | na | na | (<36) | | |
| 09 | R457H/R457H | 0.6/Japan | Y/na | Y | ((231) | L (375) | H (63) | (122) | N (6.2) | na | H (6.3) | N (<0,3); L | | |
| 10 | R457H/R457H | 1.2/Japan | P/na | B | N (286) | N (772) | H (34) | H | N (3.1) | na | H (9.4) | (<36) | | |
| | | | | | H (618) | | | (169) | | | | N (1.4); L (<36) | | |
| | | | | | | | | na | | | | H (1.7); N (205) | | |
| 02 | R457H/R457H | 0.3/Japan | Y/Y | M | N (326) | L (536) | H (15) | H | N (2.4) | na | H (3.5) | N (1.0); N (80) | [207] | |
| 03 | R457H/R457H | 0.3/Japan | Y/Y | M | N (390) | L (654) | H (15) | (111) | N (8.3) | na | N (1.8) | N (0.3); N (<40) | | |
| | | | | | | | | H | | | | | | |
| | | | | | | | | (108) | | | | | | |

| | | | | | | | | | | | | | |
|----|---|-----------------------|------------------|---|--|-----------|------------|-----------|-----------|-----------|-------------|-----------------------|-------|
| 17 | R457H/Q201X | 0.8 (Japan) | P/N | B | Hormonal measurements are not individually available | | | | | | | | [190] |
| 21 | R457H/E580Q | 12 years (Japan) | N/N | Y | | | | | | | | | |
| 01 | A287P/NF + <u>CYP21A2</u> del/P30L+In2s | 18 days (Canada) | P/N | M | <i>na</i> | <i>na</i> | H 1,69) | <i>na</i> | <i>na</i> | N (0.8) | H (13.8) | N (1.7); <i>na</i> | [191] |
| 11 | R457H/R457H | 3.0/Japan | About | M | Hormonal measurements are not individually available; in general, 17-OHP was normal or elevated at the baseline and above the normal range after ACTH stimulation, and cortisol was normal at the baseline but barely responded to ACTH stimulation. | | | | | | | | [192] |
| 12 | R457H/R457H | 0.2/Japan | 50% of | M | | | | | | | | | |
| 13 | | 0.1/Japan | Pts. & | M | | | | | | | | | |
| 14 | R457H/R457H | 18/Japan | Ms. | M | | | | | | | | | |
| 27 | R457H/R457H | 4.2/Japan | showe | Y | | | | | | | | | |
| 28 | R457H/ NTrascr. | 17/Japan | d | Y | | | | | | | | | |
| 34 | R457H/ I444fsX449 R357H/348delV | 0.7/Japan | virilizat ion | Y | | | | | | | | | |
| 02 | N185K/L577R | 19/Caucasian | N/ <i>na</i> | N | L (267) | L (234) | H (36) | H (71) | <i>na</i> | <i>na</i> | N (2.6) | N (0.8); N (92) | [193] |
| 03 | G539R/1373delC | 17/Ireland | Y/ <i>na</i> | Y | N (339) | L (391) | <i>na</i> | <i>na</i> | <i>na</i> | N(2.6) | N (4.5) | <i>na</i> ; N (40) | |
| 04 | G539R/697- 98insGAAC | 0/Cauc./Australi a | Y/ <i>na</i> | Y | L (63) | L (430) | N (4.7) | H (20) | <i>na</i> | L (<0.8) | <i>na</i> | <i>na</i> ; <i>na</i> | |
| 01 | P399-E401del/ “ | 1.5/Turkey | Y/ <i>na</i> | M | N (331) | L (276) | H (93) | H (85) | N (5.5) | L | N (1.0) | H (1.6); <i>na</i> | [194] |
| 02 | P399-E401del/ “ | 10.5/Turkey | Y/ <i>na</i> | Y | N(327) | L (300) | H (74) | H (71) | L (0.7) | (0.082) | N (2.0) | N (<0.3); <i>na</i> | |
| | | | | | | | | | | L (0.23) | | | |
| 02 | A287P/A287P | 12/Poland | Y/ <i>na</i> | M | N (607) | N (717) | H (72) | H (87) | <i>na</i> | N (2.4) | N (3.4) | <i>na</i> ; L (<50) | [187] |
| 03 | A287P/A287P | 23/Italy | Y/N | M | L (149) | L (158) | H (68) | H (82) | <i>na</i> | L (2.0) | <i>na</i> | L (0.5); <i>na</i> | |
| 04 | T142A/Y376LfsX74 | 19/Netherlands | N/ <i>na</i> | Y | N (375) | N (425) | H (25) | H (36) | <i>na</i> | L (1.2) | L (0.6) | N (1.1); N (90) | |
| 05 | A287P/R223X | 16/Germany | Y/N | Y | L (190) | L (314) | H (15) | <i>na</i> | <i>na</i> | N (4.2) | N (1.7) | N (0.5 ; N (84) | |

| | | | | | | | | | | | | | |
|----|-----------------------|-----------------|------|----|--|---------|--------|--------|---------|---------|---------|--------------|--------|
| 05 | A287P/ NF | 0/Germany | Y/Y | Y | na | L (127) | H (20) | na | na | na | na | na | [183,1 |
| 06 | A287P/IVS6 -2 A>T | 0/USA | Y/Y | Y | N (462) | L (512) | na | na | na | na | na | na | 91,194 |
| 11 | A287P/H628P | 0/USA | Y/Y | Y | L (170) | L (209) | H (31) | na | na | na | na | na |] |
| 13 | A287P/Del ex 1-1 | 0/Netherlands | N/na | M | N (607) | N (717) | H (72) | na | na | na | na | na | |
| 14 | A287P/IVS8 + 1 G>A | 0/UK | Y/na | Y | na | na | H (39) | na | na | na | na | na | |
| 15 | A287P/A287P | 0/USA | Y/na | Y | na | na | na | na | na | na | na | na | |
| 18 | A287P/A287P | 0/USA | Y/na | na | L (121) | L (303) | na | na | na | na | na | na | |
| 21 | Y87X/NF | 0/Austria | Y/na | N | L (149) | L (158) | H (68) | na | na | na | na | na | |
| 25 | R498P/R498P | 0/Pakistan | Y/na | Y | N (495) | L (548) | na | na | na | na | na | na | |
| 30 | A287P/Dup ex2-5 | 31/Netherlands | Y/na | Y | L (360) | L (350) | H (20) | na | na | na | na | na | |
| 02 | R454H/1698insC | 11/Japan | Y/na | Y | Hormonal diagnostic workup by urinary steroid analysis | | | | | | | [200] | |
| 01 | R457H/I444fsX449 | 0.6/Korea | YS/N | Y | L (257) | L (265) | H (68) | H(110) | na | L (0.3) | L (0.3) | N (0.3); na | [201] |
| 01 | R457H/R357H | 0/Nepal | Y/Y | Y | L (143) | na | H (58) | na | na | na | na | N (0.3); na | [206] |
| 01 | A287P/R457H | 0/Romania | Y/Y | Y | N (nr) | na | H (nr) | na | na | N (nr) | na | N (nr); na | [202] |
| 01 | R223X/M408K | 0.6/Brazil | YS/Y | B | L (248) | na | H (35) | na | N (2.1) | na | N (0.7) | N (0.07); na | [203] |
| 01 | A287P/IVS7 c.732-2A>T | Prenatal/France | Y/na | Y | na | na | na | na | na | na | na | na | [204] |
| 01 | A457H/ G177A | 21/Korea | N/na | Y | N (403) | L (361) | H (16) | na | na | na | na | na | [205] |

This table includes reported female patients for whom there are some published plasma hormone data; the case n. refers to the corresponding paper . “N” means the value was in the normal range; “L” means the value was below the normal range; “H” means the value was above the normal range; "nr" and “na” indicate that the hormonal value was not reported or measured, respectively. When available, the measured specific hormone level have been reported in brackets . Stimulated = Value after stimulation with ACTH; F = cortisol (divide by 2.759 to obtain ng/mL); 17OHP = 17OH progesterone (divide by 3.026 to obtain ng/mL); DOC = deoxycorticosterone; DHEA = dehydroepiandrosterone (divide by 3.467 to obtain ng/mL); DHEAS = dehydroepiandrosterone sulfate (divide by 2.714 to obtain µg/mL); A = androstenedione (divide by 3.491 to obtain ng/mL); T = testosterone (divide by 3.467 to obtain ng/mL); E2 = Estradiol (divide by 3.671 to obtain pg/mL). NTrascr.= not transcribed; NF = Not found; *All hormone levels are expressed in nmol/L except for DHEAS (µmol/L) and E2 (pmol/L).

° Pt = Postnatal presence (Y = clitoromegaly + labial fusion; P = partial virilization with clitoromegaly or labial fusion; S: M to F change) or absence (N) of virilization in Patients; “ M = presence of virilization during pregnancy in Mothers (Y). # positive to neonatal CAH screening; ^ Skeletal abnormalities: Y = overt at birth, M = mild, B = borderline.