

Supplementary Figures

Inhibitory effect of Avn-A-B-C on tyrosinase activity and melanogenesis in α -MSH-activated SK-MEL-2 cells: in vitro and in silico analysis

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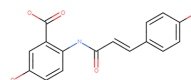
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Derek Nexus Report

Submitted Compound - AvnA.mol



Report Information

Author	Report date	Prediction date	Program version
Admin	01 July 2021 13:51:06	01 July 2021 13:51:05	Derek Nexus: 6.1.0, Nexus: 2.3.0

Processing Options

Selected Species	Selected Knowledge Base(s)	Reasoning Level
mammal	Derek KB 2020 1.0	At least EQUIVOCAL
Perceive tautomers	Perceive mixtures	Match alerts without rules
Yes	Yes	No
Show Open likelihood	Show Negative Predictions	Show Rapid Prototypes
No	Yes	Yes
Filter nearest neighbours on misclassified features		
Yes		

Smiles: C1=C(C=CC(=O)O)NC(=O)C=CC2=CC=C(C=C2)O

Exact Mol Mass 299.0794
Average Mol Mass 299.28 (Source: Lhasa Limited, version 1.0)
Log Kp -2.48 (Source: Potts & Guy, version 1.0)
Log P 2.91 (Source: BioByte Corp., version 5.9)

Predictions

Knowledge Base: Derek KB 2020 1.0

Version	Last Modified Date	Certified by
1.0	26/03/2020 17:26:54	Lhasa Limited, Leeds, Yorkshire, UK

Reasoning Summary

- ◆ **Hepatotoxicity in mammal is PLAUSIBLE**
 - Alert matched: 619 para-Aminophenol or derivative
- ◆ **Mitochondrial dysfunction in mammal is EQUIVOCAL**
 - Alert matched: RapidPrototype111 para-Aminophenol or derivative
- ◆ **Nephrotoxicity in mammal is PLAUSIBLE**
 - Alert matched: 818 para-Aminophenol or derivative
- ◆ **Skin sensitisation in mammal is EQUIVOCAL**
 - Alert matched: 439 Substituted phenol

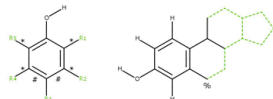
Endpoints not firing any alerts at the selected reasoning level (57)

Salpha-Reductase inhibition	Lachrymation
Adrenal gland toxicity	Methaemoglobinaemia
alpha-2-mu-Globulin nephropathy	Mutagenicity in vitro
Anaphylaxis	Mutagenicity in vivo
Androgen receptor modulation	Neurotoxicity
Bladder disorders	Non-specific genotoxicity in vitro
Bladder urothelial hyperplasia	Non-specific genotoxicity in vivo
Blood in urine	Occupational asthma
Bone marrow toxicity	Ocular toxicity
Bradycardia	Oestrogen receptor modulation
Carcinogenicity	Oestrogenicity
Cardiotoxicity	Peroxisome proliferation
Cerebral oedema	Phospholipidosis
Chloracne	Photo-induced chromosome damage in vitro
Cholinesterase inhibition	Photo-induced non-specific genotoxicity in vitro
Chromosome damage in vitro	Photo-induced non-specific genotoxicity in vivo
Chromosome damage in vivo	Photoallergenicity
Cumulative effect on white cell count and immunology	Photocarcinogenicity
Cyanide-type effects	Photomutagenicity in vitro
Developmental toxicity	Phototoxicity
Glucocorticoid receptor agonism	Pulmonary toxicity
HERG channel inhibition in vitro	Respiratory sensitisation
High acute toxicity	Splenotoxicity
Irritation (of the eye)	Teratogenicity
Irritation (of the gastrointestinal tract)	Testicular toxicity
Irritation (of the respiratory tract)	Thyroid toxicity
Irritation (of the skin)	Uncoupler of oxidative phosphorylation
Kidney disorders	Urolithiasis

Alert Descriptions

Alert: 439 Substituted phenol (from KB: Derek KB 2020 1.0)

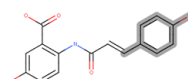
Alert Description Image



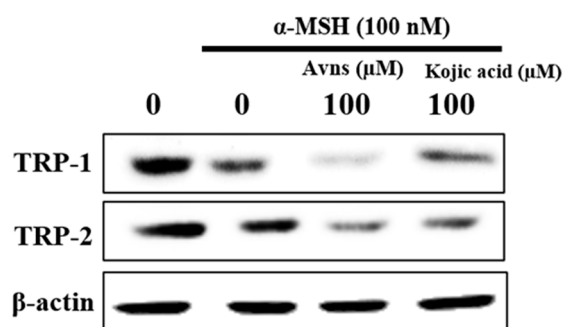
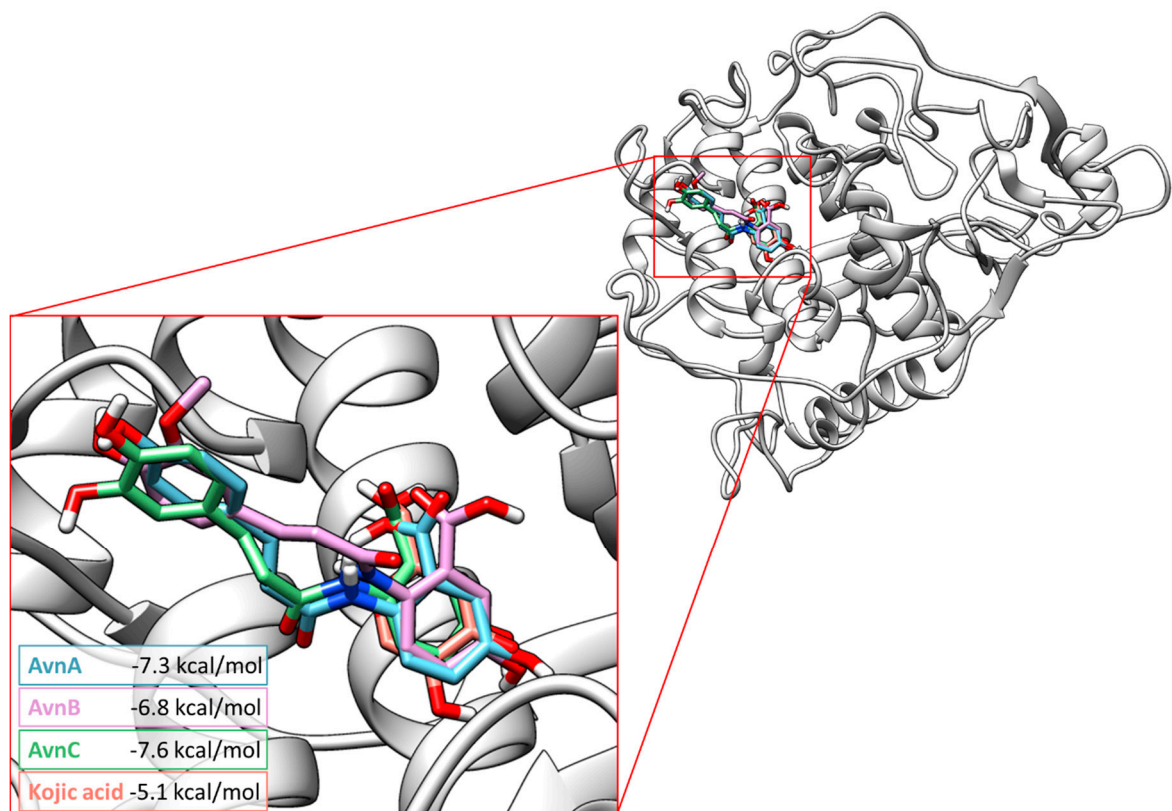
R1 = H, CH₃, F, Cl, Br, I
R2, R4 = H, F, Cl, Br, I, CH₃ or C (sp² or sp hybridised) except C(=O)OR6
R3, R5 = H, F, Cl, Br, I, C except C(=O)OR7
R1-R6 cannot all be hydrogen
R6, R7 = C, H

Atoms marked * require a double bond and cannot be attached to additional heteroatoms
All ring fusions allowed except bonds marked # cannot be fusion bonds
Bonds marked * can be single or part of an aromatic fusion
Dashed bonds can be either single or double

Match with query compound



Supplementary Data Fig. 1. QSAR Prediction results for AvnA by the Derek



Supplementary Data Fig. 2. Positive control experiments