

Table 1. Functional and ToxCast HTS Assay Characteristics.

Assay Platform	Species	Description	Test concentrations 5HPP-33 (μM)	Test concentrations TNP-470 (μM)
Functional <i>In Vitro</i>				
Whole Embryo Culture (WEC)	Rat	Whole organism	1.6–46.0	0.00025–2.5
Fish Embryotoxicity (ZET)	Zebrafish	Whole organism-chorion on	0.001–10.0	0.001–10.0
Aortic Explant Assay (AEA)	Rat	Primary organ culture	0.46–247	0.000025–0.25
ToxCast <i>In Vitro</i> HTS				
ACEA Biosciences (ACEA)	Human	Real-time electronic sensing for cytotoxicity and estrogen-dependent growth in T-47D cells ^a	0.006–100	NA
Apredica (APR)	Human	High-content cellular imaging HepG2 cells ^b	0.39–200	0.39–200
Attagene (ATG)	Human	Multiplexed transcriptional reporter genes in HepG2 cells ^c	0.09–200	0.09–200
BioSeek (BSK)	Human	Multiplexed protein expression profiling (BioMap) in primary human cell (co)cultures ^d	1.48–40	1.48–40
CeeTox	Human	Multiplexed enzyme activity for steroids in H295R cells ^e	0.4–100	NA
NCCT	Rat, pig	TPO inhibition assays in a cell-free format ^f	NA	0.03–30
NHEERL ZF	Zebrafish	Whole organism-chorion on ^g	0.03–80	0.009–30
Novascreen (NVS)	Human, rat, bovine, guinea pig, sheep, mouse, rabbit, boar	Receptor-binding and enzyme activity assays (ENZ) in a cell-free format ^h	0.009–20 0.02–50 (ENZ)	0.009–20 0.02–50 (ENZ)

Odyssey Thera (OT)	Human	Protein-fragment complementation technology targeting signaling pathways in cells ⁱ	0.3–100	0.3–100
Tanguay ZF	Zebrafish	Whole organism-dechorionated ^j	0.006–60	0.002–20
Tox21 (Tox21)	Human	Cellular assays targeting nuclear receptors, cell stress pathways and cell viability ^k	0.001–100	0.0002–30

Note: Detailed descriptions of the assay platforms and endpoints measured can be found at: www.epa.gov/ncct/toxcast/data.

a

(Abassi, Xi et al., 2009, Rotroff, Dix et al., 2013).

b

(Shah, Ely et al., 2015).

c

(Romanov, Medvedev et al., 2008, Martin, Dix et al., 2010).

d

Houck et al., 2009; Kleinstreurer et al., 2014.

e

(Karmaus, Toole et al., 2016).

f

(Paul Friedman, Watt et al., 2016).

g

(Padilla, Corum et al., 2012); iCSS ToxCast Dashboard (<https://actor.epa.gov/dashboard/>).

h

Knudsen et al., 2011; (Sipes, Martin et al., 2013).

i

(Filer, Antczak et al., 2015).

j

(Truong, Reif et al., 2014).

k

(Huang, Xia et al., 2011); (Inglese, Auld et al., 2006).