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Erratum: Addressing chemically-induced obesogenic metabolic disruption: selection of chemicals for *in vitro* human PPAR α , PPAR γ transactivation, and adipogenesis test methods

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KEYWORDS

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An Erratum on

Addressing chemically-induced obesogenic metabolic disruption: selection of chemicals for *in vitro* human PPAR α , PPAR γ transactivation, and adipogenesis test methods

By Ozcagli E, Kubickova B and Jacobs MN (2024). *Front. Endocrinol.* 15:1401120. doi: 10.3389/fendo.2024.1401120

Due to a production error, there was a mistake in **Tables 2A–C** as published. The molecular structures were incorrectly placed in these tables. The corrected **Tables 2A–C** appear below.

The publisher apologizes for this mistake.

The original version of this article has been updated.

TABLE 2A Selected chemicals and activity bands for the PPAR α assay.

Chemical	Cas No.	Structure	Use	hPPAR α ag/antag ● inactive ○
Negative				
Bisphenol A (BPA)	80-05-7		Plasticiser, industrial chemical	○ -
Triphenylphosphate (TPP)	115-86-6		Industrial chemical	○ -
Dichlorodiphenyldichloroethylene (pp'-DDE)	72-55-9		Pesticide metabolite (Stockholm POPs list)	○ -
Triclosan (TCS)	3380-34-5		Bactericide	○ -
Rosiglitazone (ROSI)	122320-73-4		Pharmaceutical	○ -
Chlorpyrifos (CPF)	2921-88-2		Organophosphate pesticide	○ -
Perfluorohexanoic acid (PFHXA)	307-24-4		Breakdown product of PFAS	○ -
(aR)-4-chloro-a-[3-(trifluoromethyl)phenoxy] benzoic acid, (MBX-102/JNJ39659100) Arhalofenate MBX-102	24136-23-0		Experimental pharmaceutical	○ -
Tetrabrominated BPA (TBBPA)	79-94-7		Flame retardant	○ -/?
LGD1069 (Targretin) Bexarotene	153559-49-0		Pharmaceutical	○ -
Weak activity				
Phytanic acid	14721-66-5		Dietary lipid	● + Very weak agonist 10 ⁻⁴ μ M
Clofibrate	637-07-0		Pharmaceutical, fibrate	● + Weak-moderate agonist up to 10 ⁻⁴ μ M
AGN194204 (IRX4204)	220619-73-8		Pharmaceutical	● Weak antagonist
Weak to moderate activity				
Mono-(2-Ethylhexyl) Phthalate (MEHP)	4376-20-9		Phthalate, plasticiser	● + Moderate agonist

(Continued)

TABLE 2A Continued

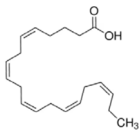
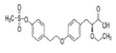
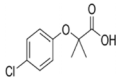


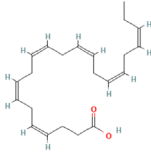
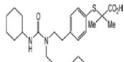
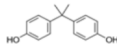
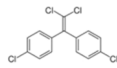
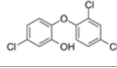

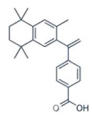
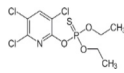
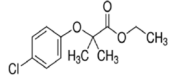
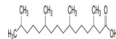
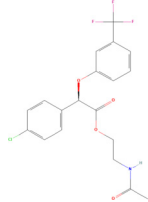
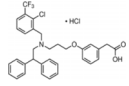
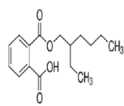
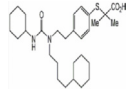
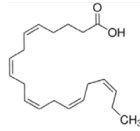
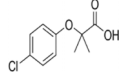

Chemical	Cas No.	Structure	Use	hPPAR α ag/antag ● inactive ○
Weak to moderate activity				
Eicosapentaenoic acid (EPA)	10417-94-4		Nutrient, long chain PUFA essential fatty acid	● + Moderate agonist
Tesaglitazar/AZ242	251565-85-2		Pharmaceutical	● + Selective moderate agonist 3 μ M
Clofibric acid	882-09-7		Herbicide and pharmaceutical; active metabolite of clofibrate	● + Moderate agonist (EC ₅₀ = 50.0 μ M)
Strong activity				
Perfluorooctanoic acid (PFOA)	335-67-1		Industrial chemical, non-stick coating	● + Strong agonist
Pristanic acid	1189-37-3		Dietary lipid	● + Strong agonist 1 μ M
Docosahexaenoic acid (DHA)	6217-54-5		Nutrient, long chain PUFA essential fatty acid	● + Strong agonist
Positive control				
GW7647	265129-71-3		Pharmaceutical candidate	● + Selective agonist, positive control 10 nM

TABLE 2B Selected chemicals and activity bands for the PPAR γ assay.

Chemical	Cas No.	Structure	Use	hPPAR γ ag/antag ● inactive ○
Negative				
Bisphenol A (BPA)	80-05-7		Plasticiser, industrial chemical	○ -
Dichlorodiphenyldichloroethylene (pp'-DDE)	72-55-9		Pesticide metabolite (Stockholm POPs list)	○ -
Triclosan (TCS)	3380-34-5		Bactericide	○ -
Perfluorohexanoic acid (PFHXA)	307-24-4		Breakdown product of PFAS	○ -

(Continued)

TABLE 2B Continued

Chemical	Cas No.	Structure	Use	hPPAR γ ag/ antag ● inactive ○
Negative				
LGD1069 (Targretin) Bexarotene	153559-49-0		Pharmaceutical	○ -
Weak activity				
Chlorpyrifos (CPF)	2921-88-2		Organophosphate pesticide	● + Weak agonist
Clofibrate	637-07-0		Pharmaceutical, fibrate	● + Weak-moderate agonist
Phytanic acid	14721-66-5		Dietary lipid	● + Weak-moderate agonist
(<i>aR</i>)-4-chloro-a-[3-(trifluoromethyl)phenoxy]benzeneacetic acid, (MBX-102/JN)39659100 Arhalofenate MBX-102	24136-23-0		Experimental pharmaceutical	● + Weak agonist
GW3965 hydrochloride	405911-17-3		Pharmaceutical candidate	● + Weak agonist
Weak to moderate activity				
Mono-(2-Ethylhexyl) Phthalate (MEHP)	4376-20-9		Phthalate, plasticiser	● + Moderate agonist
GW7647	265129-71-3		Pharmaceutical candidate	● + Moderate agonist
Eicosapentaenoic acid (EPA)	10417-94-4		Nutrient, long chain PUFA essential fatty acid	● + Moderate agonist
Clofibric acid	882-09-7		Herbicide and pharmaceutical; active metabolite of clofibrate	● + Weak-Moderate agonist (but weaker than PPAR α)
Pristanic acid	1189-37-3		Dietary lipid	● + Weak-moderate agonist 10 μ M

(Continued)

TABLE 2B Continued

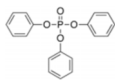
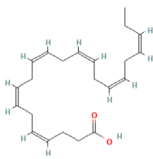
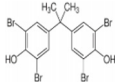

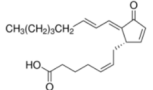
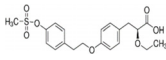
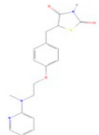
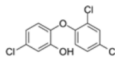
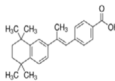
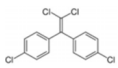
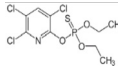

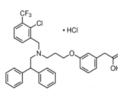
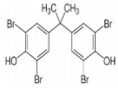
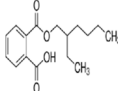
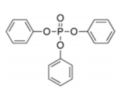
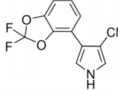
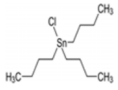
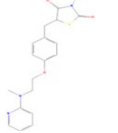
Chemical	Cas No.	Structure	Use	hPPAR γ ag/ antag ● inactive ○
Strong activity				
Triphenyl phosphate (TPP)	115-86-6		Industrial chemical: Adhesives and sealants, coating products, cosmetics and personal care products	● + Strong agonist
Docosahexaenoic acid (DHA)	6217-54-5		Nutrient, long chain PUFA essential fatty acid	● + Strong agonist
Tetrabrominated BPA (TBBPA)	79-94-7		Flame retardant	● + Strong agonist
Perfluorooctanoic acid (PFOA)	335-67-1		Industrial chemical, non-stick coating	● + Strong agonist
15-Deoxy- Δ 12,14-prostaglandin J2 (15d-PGJ2)	87893-55-8		Metabolite of endogenous prostaglandin (PGJ2)	● + Strong agonist
Tesaglitazar/ AZ 242	251565-85-2		Pharmaceutical	● + Strong agonist 40 nM
Positive control				
Rosiglitazone (ROSI)	122320-73-4		Pharmaceutical	● + Positive control

TABLE 2C Selected chemicals and activity bands for the hMSC adipogenesis assay.

Chemical	Cas No.	Structure	Use	hMSC adipogenesis (lipid accumulation) ag/antag ● inactive ○
Negative				
Triclosan (TCS)	3380-34-5		Bactericide	○ -
TTNPB, 4-[(E)-2-(5,6,7,8-Tetrahydro-5,5,8,8-tetramethyl-2-naphthalenyl)-1-propenyl] benzoic acid, Arotinoid acid	71441-28-6		Pharmaceutical	○ - Strong inhibitor of adipogenesis; unlike retinoic acids (9cRA) that promotes adipogenesis

(Continued)

TABLE 2C Continued

Chemical	Cas No.	Structure	Use	hMSC adipogenesis (lipid accumulation) ag/antag ● inactive ○
Negative				
Dichlorodiphenyldichloroethylene (pp'-DDE)	72-55-9		Pesticide metabolite (Stockholm POPs list)	○ ?-
Chlorpyrifos (CPF)	2921-88-2		Organophosphate pesticide	○ -
Weak activity				
Perfluorooctanoic acid (PFOA)	335-67-1		Industrial chemical, non-stick coating	● + Weak inducer
Weak to moderate activity				
GW3965 hydrochloride	405911-17-3		Pharmaceutical candidate	● + Weak/moderate inducer
Tetrabrominated BPA (TBBPA)	79-94-7		Flame retardant	● +Moderate inducer 10 μM induced adipogenesis in 3T3-L1 cells
Mono-(2-Ethylhexyl) Phthalate (MEHP)	4376-20-9		Phthalate, plasticiser	● + Moderate 10 μM and was maximal at 100 μM
Triphenyl phosphate (TPP)	115-86-6		Industrial chemical: Adhesives and sealants, coating products, cosmetics and personal care products	● + Agonist at high dose (>1μM)
Strong activity				
Fludioxonil	131341-86-1		Non-systemic fungicide	● + Strong (significant at 0.2 μM)
Tributyltin (TBT) chloride	1461-22-9		Fungicide	● + Strong inducer adipogenic differentiation (3T3-L1)
Positive control				
Rosiglitazone (ROSI)	122320-73-4		Pharmaceutical	● + Positive control