# **Supporting Information**

# Design and Identification of a GPR40 Full Agonist (SCO-267) Possessing a 2-Carbamoylphenyl Piperidine Moiety

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Analytical HPLC method. Analytical HPLC data were collected by a HPLC with NQAD or Corona CAD (Charged Aerosol Detector) or photo diode array detector. The column was a Capcell Pak C18AQ (50 mm × 3.0 mm ID, Shiseido, Japan) or L-column 2 ODS (30 mm x 2.0 mm I.D., CERI, Japan) with a temperature of 50 °C and a flow rate of 0.5 mL/min. Mobile phase A and B were a mixture of 50 mM ammonium acetate, water and acetonitrile (1:8:1, v/v/v) and a mixture of 50 mM ammonium acetate and acetonitrile (1:9, v/v), respectively. The ratio of mobile phase B was increased linearly from 5% to 95% over 3 min, 95% over the next 1 min.





Compound 3



#### Compound 4a



面積%

99.51

0.16

0.33

#### Compound 5



Compound 4b



Compound 4c



Compound 4d



Compound 4e



	保持時間	ピーク面積	分割	面積%
1	2.421	150	bb	0.07
2	2.739	131	bb	0.06
3	3.069	208723	BB	99.75
4	3.973	232	bb	0.11

# Compound 4f



#### PDA Ch1 220nm

Peak#	Time	Area	Area%	Height
1	1.79	130944	100.00	82630

# Compound 4g



# Compound 4h



Compound 6a



Compound 6b



Compound 6c



Compound 6d



Compound 6e



Compound 6f



 保持時間
 ピーク面積
 分割
 面積%

 1
 1.887
 58102
 Bb
 3.44

 2
 1.977
 4939
 bb
 0.29

 3
 2.077
 6600
 bb
 0.39

 4
 2.358
 1621794
 VB
 95.88

### Compound 6g



Compound 6h



Compound 7a



Compound 7b



Compound 7c



Compound 7d



Compound 7e



Compound 7f



Compound (S)-7f



Compound (R)-7f



Figure S1: Competitive binding assay result of 4a (incubation time: 1 h)



Another independent experiment data also exhibited that AM-1638 competed with 4a for

binding to GPR40.