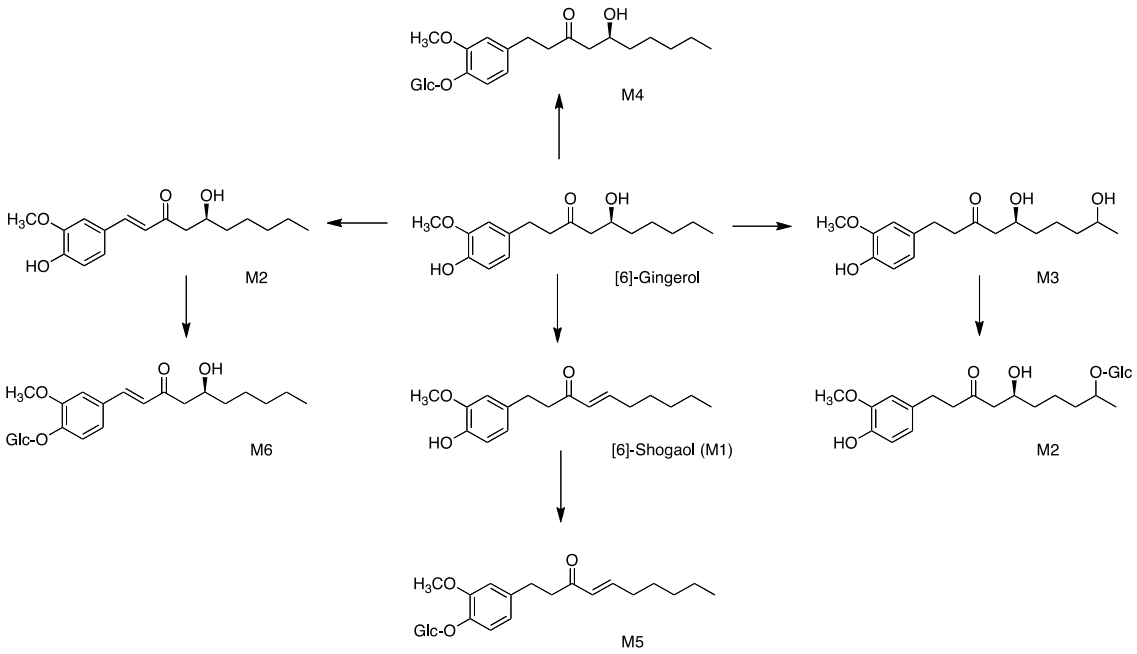
6-Gingerol



[Gauthier et al., *Biomed Chromatogr*. 2011 Feb 18. DIO: 10.1002/bmc.1585.]

【化合物】6-Gingerol
【測定機器】HPLC; LC-MS/MS
【対象】ヒト [Zick et al., *Cancer Epidemiol Biomarkers Prev*. **17**: 1930–1936 (2008)]; ラット[Gauthier et al., *Biomed Chromatogr*. 2011 Feb 18. DIOi: 10.1002/bmc.1585.]

【代謝実験】① 被験者に Pure Encapsulation's ginger を投与した後、経時的に血清中の gingerol および shogaol 化合物濃度を HPLC で分析した。[Zick et al., *Cancer Epidemiol Biomarkers Prev*. **17**: 1930–1936 (2008)] ②ラットを用いた代謝実験: Male Sprague–Dawley rats received a single intraperitoneal dose of 40 mg/kg and rats were kept in metabolic cages. Urine and feces samples were collected over a 24 h period for the determination of [6] -gingerol excretion pathway by HPLC -MS/MS. [Gauthier et al., *Biomed Chromatogr*. 2011 Feb 18. DIO: 10.1002/bmc.1585.]

【代謝パラメータ】

Pharmacokinetic parameters of 6-gingerol and other related compounds

	1000 mg (N=6)	1500 mg (N=3)	2000 mg (N=8)
AUC（μg/L）	12.6±6.4	75.6±110.3	65.6±44.4
C_{max}（μg/L）	0.4±0.2	1.69±2.31	0.85±0.43
$t_{1/2}$ min			110.0±34.9
t_{max} min	55.0±7.7	60.0±0.0	65.6±22.6

Mean±SD

Pharmacokinetic parameters of 8-gingerol and other related compounds

	1000 mg (N=6)	1500 mg (N=3)	2000 mg (N=8)
AUC（μg/L）	2.1±2.2	2.6±2.0	18.1±20.3
C_{max}（μg/L）	0.1±0.1	0.1±0.1	0.23±0.16
$t_{1/2}$ min			113.5±41.1
t_{max} min	52.5±8.7	60.0±0.0	73.1±29.4

Mean±SD

Pharmacokinetic parameters of 10-gingerol and other related compounds

	1000 mg (N=6)	1500 mg (N=3)	2000 mg (N=8)
AUC（μg/L）	2.9±3.2	7.7±5.3	50.1±49.3
C_{max}（μg/L）	0.1±0.1	0.1±0.02	0.53±0.4
$t_{1/2}$ min			128.7±38.8
t_{max} min	60.0±0.0	80.0±34.6	75.0±27.8

Mean±SD

Pharmacokinetic parameters of 6-shogaol and other related compounds

	1000 mg (N=6)	1500 mg (N=3)	2000 mg (N=8)
AUC（μg/L）	0.8±1.5	1.6±2.8	10.9±13.0
C_{max}（μg/L）	0.1±0.1	0.04±0.08	0.15±0.12
$t_{1/2}$ min			120.4±42.0
t_{max} min	55.0±8.7	60.0±0.0	65.6±22.6

Mean±SD

[Zick et al., *Cancer Epidemiol Biomarkers Prev*. **17**: 1930–1936 (2008)]

Estimated plasma pharmacokinetic parameters after single oral administration of 2.0 g ginger extracts

	Gingerol free	6-Gingerol glcuronide	6-Gingerol sulfate
$AUC_{0\text{-t}}$ （μg h/mL）	N/A	0.74±0.56	0.43±0.26
$MRT_{0\text{-t}}$ (h)	N/A	1.61 0.34	1.77 0.34
$T_{1/2}$ (h)	N/A	1.64 0.88	1.79 0.99
T_{max} (h)	N/A	1.03±0.41	1.03±0.41
C_{max} （μg/mL）	N/A	0.45 0.25	0.26±0.13
CL/F (L h^{-1} kg^{-1})	N/A	1.32±0.58	1.77±0.84

[Yu et al., *The American Association of Pharmaceutical Scientists Journal* 2011, DOI: 10.1208/s12248-011-9286-5]

【参考文献】

Yanke Yu, Suzanna Zick, Xiaoqin Li, Peng Zou, Benjamin Wright, and Duxin Sun, Examination of the pharmacokinetics of active ingredients of ginger in humans. *The American Association of Pharmaceutical Scientists Journal* 2011, DOI: 10.1208/s12248-011-9286-5

Marie -Lou Gauthier, Jennifer Douat, Pascal Vachon and Francis Beaudry Characterization of [6] -gingerol metabolism in rat by liquid chromatography electrospray tandem mass spectrometry. *Biomed Chromatogr*. 2011 Feb 18. DOI: 10.1002/bmc.1585.

Suzanna M. Zick, Zora Djuric, Mack T. Ruffin, Amie J. Litzinger, Daniel P. Normolle, Meihua Rose Feng, and Dean E. Brenner, Pharmacokinetics of 6-, 8-, 10-gingerols and 6-shogaol and conjugate metabolites in healthy human subjects. *Cancer Epidemiol Biomarkers Prev*. **17**: 1930–1936 (2008). DOI: 10.1158/1055-9965.EPI-07-2934.