



## BMF 62 - SPICE metabolites

Spice - also known as K2 - are smokable herbal products which are spiked with compounds like JWH-018. These drugs act as agonists at the cannabinoid receptors in the brain, the central cannabinoid (CB1) and peripheral cannabinoid (CB2) receptor. They show similar psychological effects like  $\Delta^9$ -tetrahydrocannabinol ( $\Delta^9$ -THC). The most common compounds are JWH-018, JWH-073, and JWH-250. However, several others are also in use. Many countries have already added these compounds to their list of controlled substances, and more are likely to follow soon. This has led to an increasing interest from forensic, clinical and toxicology labs all over the world.

Investigation of metabolites of these compounds is in full speed. In 2011 several LC-MS/MS and SPE (solid phase extraction) methods for spice metabolites were developed. Urinary metabolites derived by human liver microsomes are *N*-alkyl terminal carboxy as well as aromatic hydroxy derivatives and other hydroxylated compounds. The concentrations of these metabolites in urine are dependent on type of drug and metabolite. Sensitivity, accuracy, and precision of these analytical methods will be increased by using internal standards.

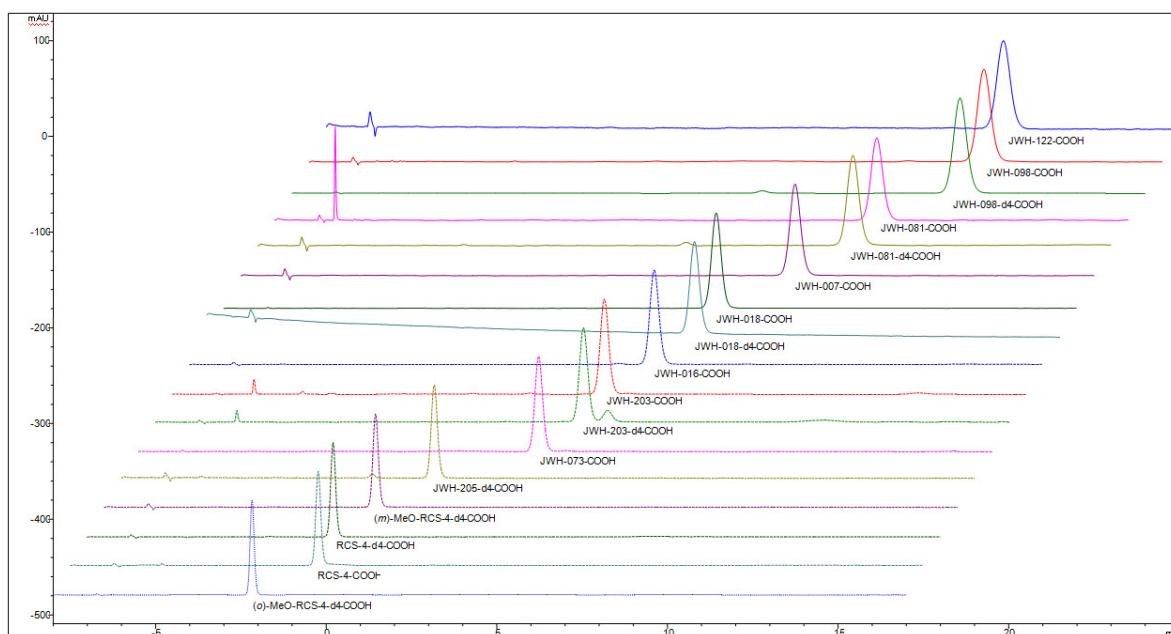
Chiron proudly presents a wide range of spice-metabolites and their internal standards.

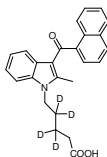
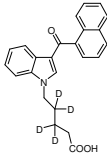
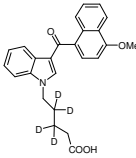
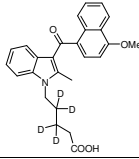
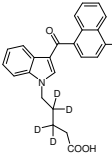
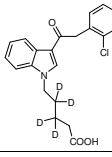
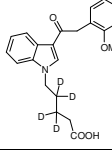
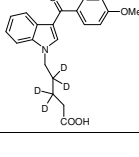
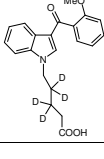
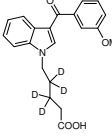
We are continuously expanding our selection of these products, if you are looking for some that are not listed here, please contact us. We may still be able to offer. All are available as solution (50  $\mu$ g/mL in acetonitrile).

Chiron No.	Compound	Structure
10049.24	JWH-016 COOH	
10047.24	JWH-018 COOH	
10051.23	JWH-073 COOH	

Chiron No.	Compound	Structure
10053.25	JWH-081 COOH	
10055.26	JWH-098 COOH	
10057.21	JWH-203 COOH	
10062.21	RCS-4 COOH	

RP-C18 HPLC of *N*-alkyl terminal carboxy SPICE metabolites and their internal standards at 280 nm.



Chiron No.	Compound	Structure
10059.25	JWH-007 COOH-d4	
10048.24	JWH-018 COOH-d4	
10054.25	JWH-081 COOH-d4	
10056.26	JWH-098 COOH-d4	
10060.25	JWH-122 COOH-d4	
10058.21	JWH-203 COOH-d4	
10061.22	JWH-250 COOH-d4	
10063.21	RCS-4 COOH-d4	
10064.21	RCS-4 ortho COOH-d4	
10065.21	RCS-4 meta COOH-d4	

## References:

- 1) J. W. Huffman et al. *Bioorg. Med. Chem.* **2003**, 11, 539-549.
- 2) K. C. Chimalakonda et al. *Anal. Chem.* **2011**, 83, 6381-6388.
- 3) C. L. Moran et al. *Anal. Chem.* **2011**, 83, 4228-4236.
- 4) S. Beuck et al. *Anal. Bioanal. Chem.* **2011**, 401, 493-505.
- 5) M. A. ElSohly et al. *J. Anal. Tox.* **2011**, 35, 487-495.

