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Three newly identified lipophilic flavonoids in Tanacetum parthenium supercritical fluid extract penetrating the Blood-Brain Barrier

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HIGHLIGHTS:

- Optimized supercritical fluid extraction of lipohilic flavonoids and parthenolid from *Tanacetum parthenium* L.
- Three newly identified lipophilic flavonoids (aceronin, sudachitin, nevadensin) in *Tanacetum parthenium* L.
- PAMPA-BBB penetration of flavonoids and sesquiterpene lactones from feverfew

ABSTRACT

Feverfew (*Tanacetum parthenium* L.) as a perennial herb has been known for centuries due to its medicinal properties. The main sesquiterpene lactone, parthenolide is considered to be responsible for the migraine prophylactic effect, however the pharmacological benefits of the lipophilic flavonoid components can not be neglected. Supercritical fluid extraction (7% ethanol, 22MPa, 64°C) was carried out on the leaves of *Tanacetum parthenium* L. from which the presence of methylated flavonoids beside parthenolide and other sesquiterpene lactones were indicated by

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