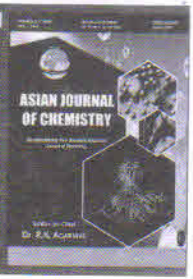
Asian Journal of Chemistry; Vol. 38, No. 2 (2026), 477-482

ASIAN JOURNAL OF CHEMISTRY

https://doi.org/10.14233/ajchem.2026.35200



GC-MS Profiling of Phytocompounds in White Pumpkin Seed Extract, Pharmacokinetic and Toxicity Properties by ADME/Tox Analysis

TAMILARASAN RANGANATHAN[1] and RAJU BALAJI[2,*]

[1]Saveetha Medical College and Hospital, Saveetha Institute of Medical and Technical Sciences (SIMATS), Saveetha University, Thandalam, Chennai- 602105, India
[2]Molecular Biology and Genomics Lab, Department of Orthopaedics, Saveetha Medical College and Hospital, Saveetha Institute of Medical and Technical Sciences (SIMATS), Saveetha University, Thandalam, Chennai-602105, India

*Corresponding author: E-mail: balajir24.smc@saveetha.com

Received: 6 November 2025 *Accepted*: 12 January 2026 *Published online*: 31 January 2026 AJC-22266

White pumpkin (*Benincasa hispida*) seeds contain diverse phytocompounds with medicinal relevance. This study profiled metabolites in the methanolic seed extract by gas chromatography–mass spectrometry (GC-MS) and assessed pharmacokinetic and toxicity properties using *in silico* ADME/Tox tools. Twenty-one phytocompounds were identified, conquered by fatty-acid esters and phytosterols; the most abundant were 9,12-octadecadienoic acid, methyl ester (20.9%) and γ-sitosterol (14.0%). Predicted drug-likeness and oral developability were generally favourable for the fatty-acid esters (high gastrointestinal absorption, limited safety liabilities), whereas sterols showed lower gastrointestinal absorption but acceptable toxicity signals.

Keywords: *Benincasa hispida*, White pumpkin seed, Phytosterols, ADME, Toxicity prediction.