

## **Anti-estrogenic and anti-aromatase activities of Citrus peels major compounds in breast cancer**

Dina M. El-Kersh<sup>1</sup>, Shahira M. Ezzat<sup>2,3\*</sup>, Maha M. Salama<sup>1,2</sup>, Engy Mahrous<sup>2</sup>, Yasmeen M. Attia<sup>4</sup>, Mahmoud Salama Ahmed<sup>5</sup>, Mohey M. Elmazar<sup>4</sup>

<sup>1</sup>Department of Pharmacognosy, Faculty of Pharmacy, The British University in Egypt, El Sherouk City, Suez Desert Road, Cairo 11837, Egypt.

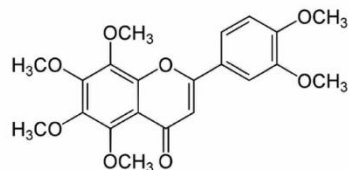
<sup>2</sup>Department of Pharmacognosy, Faculty of Pharmacy, Cairo University, Kasr El-Aini Street, Cairo 11562, Egypt.

<sup>3</sup>Department of Pharmacognosy, Faculty of Pharmacy, October University for Modern Sciences and Arts (MSA), 6th October 12611, Egypt.

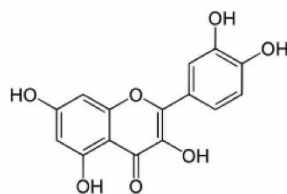
<sup>4</sup>Department of Pharmacology, Faculty of Pharmacy, The British University in Egypt, El Sherouk City, Suez Desert Road, Cairo 11837, Egypt.

<sup>5</sup>Department of Internal Medicine, Division of Cardiology, The University of Texas Southwestern Medical Center, Dallas, TX, USA

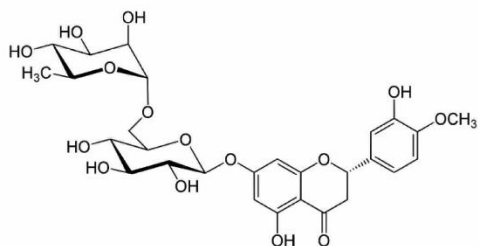
\*Corresponding author: Maha M. Salama, Department of Pharmacognosy, Faculty of Pharmacy, Cairo University, Kasr El-Ainy St., Cairo11562, Egypt. Tel.: +201008325473; E-mail: [maha.salama@pharma.cu.edu.eg](mailto:maha.salama@pharma.cu.edu.eg)



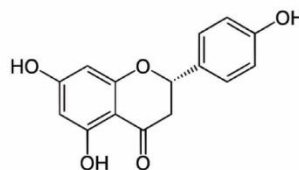
Compound C1



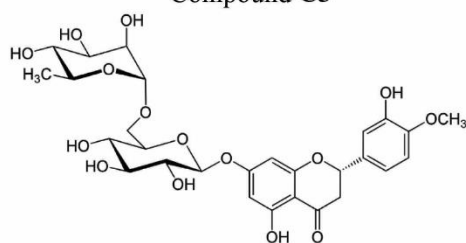
Compound C2



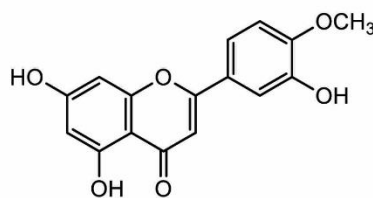
Compound C3



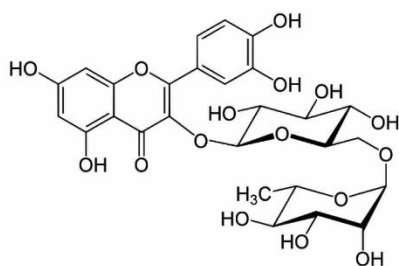
Compound C4



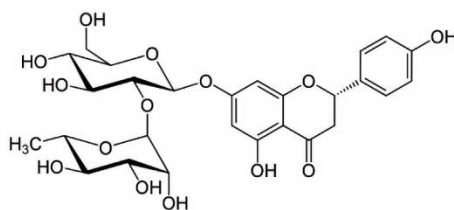
Compound C5



Compound C6



Compound C7



Compound C8

**Supp. Figure 1: Chemical structures of the isolated compounds.** C1: nobiletin; C2: quercetin; C3: diosmin; C4: naringenin; C5: hesperidin; C6: hesperitin, C7: rutin and C8: naringin.