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Phenolic Content and Antioxidant and Antimutagenic Activities in Tomato Peel, Seeds, and ByproductsMaribel Valdez-Morales[†], Laura Gabriela Espinosa-Alonso[†], Libia Citlali Espinoza-Torres[‡], Francisco Delgado-Vargas[§], and Sergio Medina-Godoy^{*†}[†] Instituto Politécnico Nacional, Centro Interdisciplinario de Investigación para el Desarrollo Integral Regional CIIDIR, Unidad Sinaloa, Laboratorio de Alimentos Funcionales, Departamento de Biotecnología Agrícola, Guasave, Sinaloa Mexico C.P. 81101[‡] Instituto Tecnológico de Estudios Superiores de Guasave, Carretera Internacional y entronque a la Brecha, Ej. El Burrioncito, Guasave, Sinaloa, Mexico[§] Universidad Autónoma de Sinaloa, Facultad de Ciencias Químico-Biológicas, Natural Products Laboratory, Av. de las Américas y Josefa Ortiz de Domínguez s/n, Ciudad Universitaria, Culiacán, Sinaloa, Mexico

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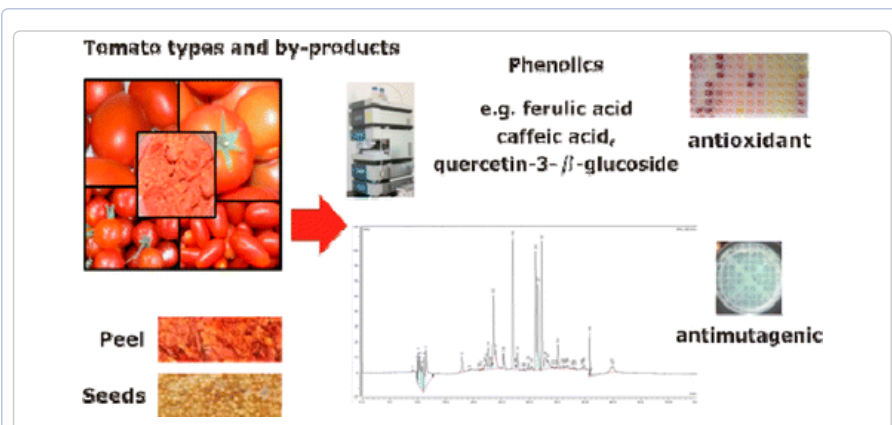
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Abstract



The phenolic content and antioxidant and antimutagenic activities from the peel and seeds of different tomato types (grape, cherry, bola and saladette type), and simulated tomato industrial byproducts, were studied. Methanolic extracts were used to quantify total phenolic content, groups of phenolic compounds, antioxidant activities, and the profile of phenolic compounds (by HPLC-DAD). Antimutagenic activity was determined by *Salmonella typhimurium* assay. The total phenolic content and antioxidant activity of tomato and tomato byproducts were comparable or superior to those previously reported for whole fruit and tomato pomace. Phenolic compounds with important biological activities, such as caffeic acid, ferulic acid, chlorogenic acids, quercetin-3-β-O-glycoside, and quercetin, were quantified. Differences in all phenolic determinations due to tomato type and part of the fruit analyzed

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