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George A Anastassiou* (ganastss@memphis.edu), Department of Mathematical Sciences,
University of Memphis, Memphis, TN 38152. *Univariate Hardy type fractional
inequalities*. Preliminary report.

Here we present integral inequalities for convex and increasing functions applied to products of functions. As applications we derive a wide range of fractional inequalities of Hardy type. They involve the left and right Riemann-Liouville fractional integrals and their generalizations, in particular the Hadamard fractional integrals. Also inequalities for left and right Riemann-Liouville, Caputo, Canavati and their generalizations fractional derivatives. These application inequalities are of $L_{-}\{p\}$ type, $p \geq 1$, and exponential type, as well as their mixture. (Received July 06, 2012)