Multiplication of Power Series

Let $f(x) = \sum_{j=0}^{\infty} a_j x^j$

and $g(x) = \sum_{k=0}^{\infty} b_k x^k$

Suppose f has radius of conv R
and g has radius of conv $R' \geq R$

Let $h(x) = f(x)\,g(x)$ for $|x| \leq R$ with $|x| < R'$