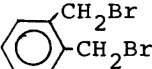
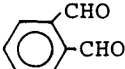
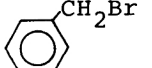
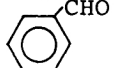
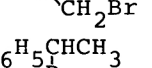
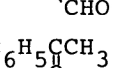




Table 1. Kornblum oxidation of benzyl bromides to carbonyl compounds by bis(*p*-methoxyphenyl)selenoxide (1a<sup>a</sup>)

Material	Product	Yield/%	Material	Product	Yield/%
$C_6H_5CH_2Br$	$C_6H_5CHO$	89 (93) <sup>b</sup>			84
<i>o</i> - $CH_3C_6H_4CH_2Br$	<i>o</i> - $CH_3C_6H_4CHO$	88			90
<i>m</i> - $CH_3C_6H_4CH_2Br$	<i>m</i> - $CH_3C_6H_4CHO$	93			85
<i>m</i> - $BrC_6H_4CH_2Br$	<i>m</i> - $BrC_6H_4CHO$	86	$C_6H_5CHCH_3$ $Br$	$C_6H_5C(=O)CH_3$	87
<i>p</i> - $BrC_6H_4CH_2Br$	<i>p</i> - $BrC_6H_4CHO$	86	$C_6H_5CHC_6H_5$ $Br$	$C_6H_5C(=O)C_6H_5$	83
<i>m</i> - $NO_2C_6H_4CH_2Br$	<i>m</i> - $NO_2C_6H_4CHO$	85	$C_6H_5CH=CHCH_2Br$	$C_6H_5CH=CHCHO$	
<i>p</i> - $NO_2C_6H_4CH_2Br$	<i>p</i> - $NO_2C_6H_4CHO$	90			

a) Reaction time, 5 h; Solvent,  $CH_3CN$  at 75 °C.

b) Reaction time, 10 h; Solvent, THF under reflux.

the base. It is thus accepted that the enhanced basicity of selenoxide (1a) relative to sulfoxides facilitated the formation of the intermediate (3a). On the other hand, a similar reaction with telluroxide (1b) did not afford benzaldehyde (5). Prolonged treatment in refluxed toluene (1d) led ultimately to only 6% yield of 5, and the main product was benzyl alcohol (90%). Although selenonium salt (3a) could not be detected in the preceding reaction, the ready formation and high stability of telluronium salt (3b) were recognized on NMR measurement; 3b demonstrated NMR signals at  $\delta$  3.66(s,  $CH_3O$ ), 4.52(s,  $CH_2$ ), 6.73 and 7.70( $A_2B_2m$ , ArH), and 7.22(s, PhH) in deuteriochloroform. It is, therefore, understandable that a reaction of 1b and 2 readily gave telluronium salt (3b), which was, however, too stable to undergo further fission into two products (4) and (5), and finally hydrolyzed to benzyl alcohol during work-up.

As shown in Table 1, the present method using bis(*p*-methoxyphenyl)selenoxide (1a) was conveniently applicable to oxidations of various benzyl bromides to the corresponding carbonyl compounds. It may be thus noted that selenoxide (1a) is a suitable agent for Kornblum oxidations owing to its rather moderate basicity. Further investigation on the scope is now in progress.

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