

$$\begin{array}{ccc}
\mathrm{Hom}_{\mathcal{D}}(R, C) & \xrightarrow{\sim} & \mathrm{Hom}_{\mathcal{C}}(D, F(C)) \\
\downarrow k \circ (-) & & \downarrow F(k) \circ (-) \\
\mathrm{Hom}_{\mathcal{D}}(R, C') & \xrightarrow{\sim} & \mathrm{Hom}_{\mathcal{C}}(D, F(C'))
\end{array}$$