Lemma. Given $\mathbf{f}_1, \mathbf{f}_2 \in \mathrm{Hom}_{\mathbf{DP}}(\mathbf{A}; \mathbf{B})$ and $\mathbf{g}_1, \mathbf{g}_2 \in \mathrm{Hom}_{\mathbf{DP}}(\mathbf{C}; \mathbf{D})$, one has:

$$\frac{\mathbf{f}_1 \preceq_{\mathbf{DP}} \mathbf{f}_2 \quad \mathbf{g}_1 \preceq_{\mathbf{DP}} \mathbf{g}_2}{\mathbf{f}_1 \otimes \mathbf{g}_1 \preceq_{\mathbf{DP}} \mathbf{f}_2 \otimes \mathbf{g}_2}$$

In other words, the monoidal product preserves order on **DP**.