$$
\begin{CD}
X \otimes^{\mathbf{L}} (Y \otimes^{\mathbf{L}} Z) @<<< \rho X \otimes (Y \otimes^{\mathbf{L}} Z) @<<< \rho X \otimes (Y \otimes \rho Z) \\
@V{\alpha^D}VV @. @VV{\simeq \downarrow \alpha}V \\
(X \otimes^{\mathbf{L}} Y) \otimes^{\mathbf{L}} Z @<<< (X \otimes^{\mathbf{L}} Y) \otimes \rho Z @<<< (\rho X \otimes Y) \otimes \rho Z
\end{CD}
$$