

$$\begin{array}{ccccc}
& & I \otimes ((v \otimes I) \otimes w) & \xrightarrow{I \otimes \alpha^{-1}} & I \otimes (v \otimes (I \otimes w)) \\
& \nearrow I \otimes \sigma_{I,v} \otimes w & \searrow & & \downarrow \alpha^{-1} \\
I \otimes ((I \otimes v) \otimes w) & & & & (I \otimes v) \otimes (I \otimes w) \\
\uparrow I \otimes \alpha^{-1} & \swarrow & \searrow & & \downarrow (I \otimes v) \otimes \lambda_w \\
I \otimes (I \otimes (v \otimes w)) & & I \otimes (\rho_v \otimes w) & \xrightarrow{\quad} & I \otimes (v \otimes \lambda_w) \\
\uparrow \alpha^{-1} & \swarrow & \searrow & & \downarrow \alpha^{-1} \\
(I \otimes I) \otimes (v \otimes w) & \xrightarrow{\rho_I \otimes (v \otimes v)} & I \otimes (v \otimes w) & \xrightarrow{\lambda_{v \otimes w}} & v \otimes w \\
& \uparrow & \uparrow & \uparrow & \downarrow \lambda_v \otimes w \\
& I \otimes (\lambda_v \otimes w) & I \otimes \lambda_{v \otimes w} & &
\end{array}$$