

## map-concat-filter-lemma1<sup>11,40</sup>

$\forall A, B:\text{Type}, L_2:(tg:\text{Id} \times (A \rightarrow B \rightarrow (\text{Top List}))) \text{ List}, L:(\text{Top} \times (\text{Id} \times \text{Top})) \text{ List}, tg:\text{Id},$   
 $a:A, b:B.$   
 $\{(\text{map}(\lambda x.x.2;L)$   
 $=$   
 $\text{concat}(\text{map}(\lambda tgf.\text{map}(\lambda x.<tgf.1, x>;(tgf.2)(a,b));L_2)$   
 $\in ((tg:\text{Id} \times \text{Top}) \text{ List}))$   
 $\Rightarrow (\neg(tg \in \text{map}(\lambda p.p.1;L_2)))$   
 $\Rightarrow (\text{filter}(\lambda ms.(ms.2).1 = tg;L) = [] \in ((\text{Top} \times (\text{Id} \times \text{Top})) \text{ List}))\}$