

Inference at * 1 1 2
of proof for Lemma list_extensionality:

....subterm.... T:t2:n

1. $T : \text{Type}$
2. $T \text{ List}$
3. $u : T$
4. $v : T \text{ List}$
5. $\forall b:(T \text{ List}). (\|v\| = \|b\|) \Rightarrow (\forall i:\mathbb{N}. (i < \|v\|) \Rightarrow (v[i] = b[i])) \Rightarrow (v = b)$
6. $T \text{ List}$
7. $u_1 : T$
8. $v_1 : T \text{ List}$
9. $(\|[u / v]\| = \|v_1\|)$
 $\Rightarrow (\forall i:\mathbb{N}. (i < \|[u / v]\|) \Rightarrow ([u / v][i] = v_1[i]))$
 $\Rightarrow ([u / v] = v_1)$
10. $\|v\|+1 = \|v_1\|+1$
11. $\forall i:\mathbb{N}. (i < (\|v\|+1)) \Rightarrow ([u / v][i] = [u_1 / v_1][i])$

$\vdash v = v_1$
by ((BackThruSomeHyp
CollapseTHEN ((Auto_aux (first_nat 1:n) ((first_nat 2:n
), (first_nat 3:n)) (first_tok SupInf:t) inil_term)))).

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12. $i : \mathbb{N}$
13. $i < \|v\|$

$\vdash v[i] = v_1[i]$

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