```
enum_inj  THM

⊢  ∀q:ℕ^+, l1,l2:ℕq*. enum(l1) = enum(l2) ⇒ l1 = l2  by UnivCD
|
1. q : ℕ^+
2. l1 : ℕq*
3. l2 : ℕq*
4. enum(l1) = enum(l2)
⊢  l1 = l2  by Unfold `enum` 4
|
4. Σ(q↑||l1||^-)+en(l1) = Σ(q↑||l2||^-)+en(l2)
⊢
| by Inst
|    Thm* ∀q:ℕ^+, n1,n2:ℕ, r1:ℕ(q↑n1), r2:ℕ(q↑n2).
|         Σ(q↑n1^-)+r1 = Σ(q↑n2^-)+r2 ⇒ n1 = n2 & r1 = r2 ∈ ℕ
|    {geom_unique}
|    [q;||l1||;||l2||;en(l1);en(l2)]
|
|\
| .....wf .....
| ⊢  q ∈ ℕ^+  by Auto
|
|\
| .....wf .....
| ⊢  ||l1|| ∈ ℕ  by Thin 4 THEN Thin 3
|
|\
| .....wf .....
| ⊢  ||l2|| ∈ ℕ  by Thin 4 THEN Thin 2
|
|\
| .....wf .....
| ⊢  en(l1) ∈ ℕ(q↑||l1||)
|   by BackThru Thm* ∀n:ℕ, l:ℕn*. en(l) ∈ ℕ(n↑||l||)    {en_bound}
|
|\
| .....wf .....
| ⊢  en(l2) ∈ ℕ(q↑||l2||)
|   by BackThru Thm* ∀n:ℕ, l:ℕn*. en(l) ∈ ℕ(n↑||l||)    {en_bound}
|
|\
| .....antecedent .....
| ⊢  Σ(q↑||l1||^-)+en(l1) = Σ(q↑||l2||^-)+en(l2)  by Auto
|
.\
. 5. ||l1|| = ||l2|| & en(l1) = en(l2)
. ⊢
.   by Inst
.      Thm* ∀n:ℕ^+, m:ℕ, l1,l2:ℕn*.
.           ||l1|| = m & ||l2|| = m ⇒ en(l1) = en(l2) ⇒ l1 = l2
.      {en_inj}
.      [q;||l1||;l1;l2]
END
```