```
incl_aux3_quo  THM

⊢  ∀n:{1...}, m:ℕn, E:(ℕn→ℕn→Prop).
|  (EquivRel i,j:ℕn. i E j) ⇒
|  (∀x,y:i,j:ℕm//(i E j). x = y ∈ i,j:ℕn//(i E j) ⟺ x = y)
| by (Analyze 0) THEN (Analyze 0) THEN (Analyze 0) THEN (Analyze 0)
|
1. n : {1...}
2. m : ℕn
3. E : ℕn→ℕn→Prop
4. EquivRel i,j:ℕn. i E j
⊢  ∀x,y:i,j:ℕm//(i E j). x = y ⟺ x = y
| by Assert (EquivRel i,j:ℕm. i E j)
|
|\
| .....assertion .....
| ⊢  EquivRel i,j:ℕm. i E j
|   by BackThru
|      Thm* ∀n:{1...}, m:ℕn, E:(ℕn→ℕn→Prop).
|           (EquivRel x,y:ℕn. x E y) ⇒ (EquivRel x,y:ℕm. x E y)
|      {rest_equi_rel}
|
.\
. 5. EquivRel i,j:ℕm. i E j
. ⊢   by UnivCD
. |
. 6. x : i,j:ℕm//(i E j)
. 7. y : i,j:ℕm//(i E j)
. ⊢  x = y ⟺ x = y  by Assert (x ∈ i,j:ℕn//(i E j))
. |
. |\
. | .....assertion .....
. | ⊢  x ∈ i,j:ℕn//(i E j)
. |   by BackThru
. |      Thm* ∀n:{1...}, m:ℕn, E:(ℕn→ℕn→Prop).
. |           (EquivRel x,y:ℕn. x E y) ⇒
. |           (∀z:x,y:ℕm//(x E y). z ∈ x,y:ℕn//(x E y))
. |      {incl_aux2_quo}
. |
. .\
. . 8. x ∈ i,j:ℕn//(i E j)
. . ⊢   by Assert (y ∈ i,j:ℕn//(i E j))
. . |
. . |\
. . | .....assertion .....
. . | ⊢  y ∈ i,j:ℕn//(i E j)
. . |   by BackThru
. . |      Thm* ∀n:{1...}, m:ℕn, E:(ℕn→ℕn→Prop).
. . |           (EquivRel x,y:ℕn. x E y) ⇒
. . |           (∀z:x,y:ℕm//(x E y). z ∈ x,y:ℕn//(x E y))
. . |      {incl_aux2_quo}
. . |
. . .\
. . . 9. y ∈ i,j:ℕn//(i E j)
. . . ⊢   by CSquash
```

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. . . |
. . . ⊢  ↓(x = y ⟺ x = y)
. . . | by (UseEqWitness *) THEN (Analyze 7) THEN (Analyze 6)
. . . |
. . . |\
. . . | 10. y1 : ℕm
. . . | 11. y2 : ℕm
. . . | 12. y1 E y2
. . . | ⊢  y1 ∈ i,j:ℕn//(i E j)
. . . |   by (Assert (y1 ∈ ℕn)) THEN (Inclusion 13)
. . . |
. . . .\
. . . . 10. y1 : ℕm
. . . . 11. y2 : ℕm
. . . . 12. y1 E y2
. . . . 13. x1 : ℕm
. . . . 14. x2 : ℕm
. . . . 15. x1 E x2
. . . . ⊢  * = *  by Analyze THEN GenRepD
. . . . |
. . . . |\
. . . . | 16. x1 = y1
. . . . | ⊢  x1 = y1  by (EqTypeD 16) THEN Analyze
. . . . |
. . . . |\
. . . . | ⊢  x1 ∈ i,j:ℕn//(i E j)
. . . . |   by (Assert (x1 ∈ ℕn)) THEN (Inclusion 16)
. . . . |
. . . . |\
. . . . | ⊢  y1 ∈ i,j:ℕn//(i E j)
. . . . |   by (Assert (y1 ∈ ℕn)) THEN (Inclusion 16)
. . . . |
. . . . .\
. . . . . 16. x1 = y1
. . . . . ⊢  x1 = y1  by (EqTypeD 16) THEN Analyze
END
```