**ESM Figure 1.** Characteristics of pancreatic tissue sections of donors used in the immunofluorescence staining experiments of human pancreatic tissues. (A) Age of the donors. (B) Body mass index of the donors. (C) Serum C-peptide levels of the donors. **p<0.01; ***p<0.001

**ESM Figure 2.** Example of identification of LC3 puncta after applying median filtering using CellProfiler. Scale bar, 10µm.
ESM Figure 3. Correlation graphs of autophagy and crinophagy with serum C-peptide levels, and disease duration. Black circles indicate non-diabetic donors, grey circles indicate autoantibody positive donors, and red circles denote donors with type 1 diabetes.
# Checklist for reporting human islet preparations used in research

Adapted from Hart NJ, Powers AC (2018) Progress, challenges, and suggestions for using human islets to understand islet biology and human diabetes. Diabetologia [https://doi.org/10.1007/s00125-018-4772-2](https://doi.org/10.1007/s00125-018-4772-2)

| Islet preparation | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8a    |
|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Unique identifier | 6015  | 6160  | 6162  | 6178  | 6235  | 6335  | 6339  | 6373  |
| Donor age (years) | 39    | 22.1  | 22.7  | 24.5  | 30    | 18.8  | 23.3  | 15.7  |
| Donor sex (M/F)   | F     | M     | M     | F     | M     | M     | M     | M     |
| Donor BMI (kg/m²) | 32.2  | 23.9  | 28.9  | 27.5  | 25.4  | 23.6  | 25    | 25    |
| Donor HbA₁₀ or other measure of blood glucose control | N/A   | 5.2   | N/A   | 5     | N/A   | 5.3   | 5.3   | 6.8   |
| Origin/source of islets<sup>b</sup> | nPOD  | nPOD  | nPOD  | nPOD  | nPOD  | nPOD  | nPOD  | nPOD  |
| Islet isolation centre | N/A   | N/A   | N/A   | N/A   | N/A   | N/A   | N/A   | N/A   |
| Donor history of diabetes? Please select yes/no from drop down list | No    | No    | No    | No    | No    | No    | No    | No    |

If Yes, complete the next two lines if this information is available

- Diabetes duration (years)
- Glucose-lowering therapy at time of death<sup>c</sup>

| Islet preparation | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16a   |
|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Unique identifier | 6034  | 6234  | 6331  | 6333  | 6226  | 6227  | 6229  | 6230  |
| Donor age (years) | 32 | 20 | 27.1 | 27.1 | 38 | 17 | 31 | 16 |
|-------------------|----|----|------|------|----|----|----|----|
| Donor sex (M/F) | F  | F  | F    | F    | F  | F  | F  | M  |
| Donor BMI (kg/m²) | 25.2 | 25.6 | 24 | 24.9 | 27.2 | 26.4 | 26.9 | 19.4 |
| Donor HbA₁c or other measure of blood glucose control | N/A | 5.8 | 5.4 | 4.7 | 5.3 | N/A | 5.5 | 5.3 |
| Origin/source of islets<sup>b</sup> | nPOD | nPOD | nPOD | nPOD | nPOD | nPOD | nPOD | nPOD |
| Islet isolation centre | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Donor history of diabetes? Please select yes/no from drop down list | No | No | No | No | No | No | No | No |

If Yes, complete the next two lines if this information is available

- Diabetes duration (years)
- Glucose-lowering therapy at time of death<sup>c</sup>

| Islet preparation | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24<sup>a</sup> |
|-------------------|----|----|----|----|----|----|----|--------|
| Unique identifier | 6232 | 6147 | 6167 | 6151 | 6170 | 6181 | 6301 | 6310 |
| Donor age (years) | 14 | 23.8 | 37 | 30 | 34.5 | 31.9 | 26 | 28 |
| Donor sex (M/F) | F | F | M | M | F | M | M | F |
| Donor BMI (kg/m²) | 20.83 | 32.9 | 26.3 | 24.2 | 36.9 | 21.9 | 32.1 | 22.4 |
| Donor HbA₁c or other measure of blood glucose control | N/A | 5.2 | N/A | N/A | 6.9 | N/A | 5.5 | N/A |
| Origin/source of islets<sup>b</sup> | nPOD | nPOD | nPOD | nPOD | nPOD | nPOD | nPOD | nPOD |
| Islet isolation centre | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Donor history of diabetes? Please select yes/no from drop down list | No | No | No | No | No | No | No | No |

If Yes, complete the next two lines if this information is available

| Diabetes duration (years) |  |  |  |  |  |  |  |
| Glucose-lowering therapy at time of death |

| Islet preparation | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32a |
|-------------------|----|----|----|----|----|----|----|-----|
| **MANDATORY INFORMATION** | | | | | | | | |
| Unique identifier | 6314 | 6397 | 6400 | 6450 | 6483 | 6388 | 6303 | 6197 |
| Donor age (years) | 21 | 21.16 | 25.15 | 22 | 30.46 | 25.2 | 22 | 22 |
| Donor sex (M/F) | M | F | M | F | F | F | M | M |
| Donor BMI (kg/m²) | 23.8 | 29.6 | 22.2 | 24.4 | 20.8 | 26 | 31.9 | 28.2 |
| Donor HbA₁c, or other measure of blood glucose control | N/A | 6 | 5.5 | 5.7 | 5.5 | 5.7 | 5.4 | 5.5 |
| Origin/source of islets<sup>b</sup> | nPOD | nPOD | nPOD | nPOD | nPOD | nPOD | nPOD | nPOD |
| Islet isolation centre | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Donor history of diabetes? Please select yes/no from drop down list | No | No | No | No | No | No | No | No |

If Yes, complete the next two lines if this information is available

| Diabetes duration (years) |  |  |  |  |  |  |
| Glucose-lowering therapy at time of death |

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### Glucose-lowering therapy at time of death

| Islet preparation | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40a |
|-------------------|----|----|----|----|----|----|----|-----|

### MANDATORY INFORMATION

| Unique identifier | 6156 | 6046 | 6302 | 6306 | 6325 | 6328 | 6367 | 6405 |
|-------------------|------|------|------|------|------|------|------|------|
| Donor age (years) | 40   | 18.8 | 38.5 | 19   | 20   | 39   | 24   | 29.1 |
| Donor sex (M/F)   | M    | F    | M    | M    | F    | M    | M    | F    |
| Donor BMI (kg/m²) | 19.8 | 25.2 | 20.5 | 24.5 | 31.2 | 24   | 25.7 | 42.5 |
| Donor HbA₁₀, or other measure of blood glucose control | N/A | N/A | 8.2 | 10.1 | N/A | 8.7 | 8.8 | 7 |
| Origin/source of islets | nPOD | nPOD | nPOD | nPOD | nPOD | nPOD | nPOD | nPOD |
| Islet isolation centre | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Donor history of diabetes? Please select yes/no from drop down list | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

If Yes, complete the next two lines if this information is available

| Diabetes duration (years) | 8 | 32.5 | 5 | 6 | 20 | 2 | 0.6 |
|---------------------------|---|------|---|---|----|---|-----|
| Glucose-lowering therapy at time of death | insulin | insulin | insulin | insulin | insulin | insulin | insulin |

### Islet preparation

| 41 | 42 | 43 |

### MANDATORY INFORMATION

| Unique identifier | 6414 | 6435 | 6477 |
|-------------------|------|------|------|

Version 1.0, created 14 Dec 2018
|                         | Donor age (years) | Donor sex (M/F) | Donor BMI (kg/m²) | Donor HbA1c or other measure of blood glucose control | Origin/source of islets | Islet isolation centre | Donor history of diabetes? Please select yes/no from drop down list | Diabetes duration (years) | Glucose-lowering therapy at time of death |
|-------------------------|-------------------|-----------------|-------------------|-----------------------------------------------------|------------------------|----------------------|----------------------------------------------------------------------|---------------------------|------------------------------------------|
|                         | 23.1              | M               | 28.4              | 14                                                  | nPOD                   | N/A                  | Yes                                                                   | 0.43                      | Lantus and Novolog                        |
|                         | 24.75             | F               | 26.9              | 11.6                                                | nPOD                   | N/A                  | Yes                                                                   | 14.75                     | insulin                                  |
|                         | 19.87             | F               | 25.3              | 10.9                                                | nPOD                   | N/A                  | Yes                                                                   | 8                         | insulin                                  |

*If Yes, complete the next two lines if this information is available*