

Resource Summary Report

Generated by [dkNET](#) on Sep 5, 2026

Qualitative & Quantitative Assessment of Human Islets for Distribution Using Dithizone (DTZ)

DOI:10.17504/protocols.io.5yvg7w6

Type: Protocol

Proper Citation

Integrated Islet Distribution Program 2019. Qualitative & Quantitative Assessment of Human Islets for Distribution Using Dithizone (DTZ). protocols.io
dx.doi.org/10.17504/protocols.io.5yvg7w6

Protocol Information

URL: <https://dx.doi.org/10.17504/protocols.io.5yvg7w6>

Authors: Integrated Islet Distribution Program

Group: Integrated Islet Distribution Program

Summary: This Standard Operating Procedure is adapted from the work of the 'National Institutes of Health-Sponsored Clinical Islet Transplantation Consortium Phase 3 Trial: Manufacture of a Complex Cellular Product at Eight Processing Facilities' following the SOP cited in the document 'Purified Human Pancreatic Islet: Qualitative and Quantitative Assessment of Islets Using Dithizone (DTZ) – Standard Operating Procedure of the NIH Clinical Islet Transplantation Consortium'. This SOP defines the assay method for quantitative and qualitative determination in the identification of human isolated islet preparations, which include endocrine and exocrine tissue, for use in the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) sponsored research in the Integrated Islet Distribution Program (IIDP). This protocol is written to assist the participating islet isolation centers and investigators who are part of this program. Dithizone (diphenyl thiocarbazon; DTZ) is an organic chemical that chelates the zinc in the insulin granules present in the beta cells of the pancreatic islets. The islet cells are stained red while the acinar cells remain unstained. DTZ staining is used as a lot release and as an in-process assay: (i) Lot release testing: DTZ staining is used to identify islets and to determine the quantity and quality of the final islet product. Islet quantity is expressed as the number of islet equivalents (IEQ), which is calculated based on the number and diameter of the islets present in the preparation, mathematically corrected for islet volume. (ii) In-process testing: DTZ staining is used to identify islets and to assess the effectiveness of the digestion, isolation and purification processes. The quality of the preparations is expressed as percent islet purity, and percent trapped islets. Islet quantity (IEQ) is also assessed.

Affiliations: Integrated Islet Distribution Program, City of Hope, Duarte, CA

Version: 1

Publication Date: 2019

Proper Citation: Integrated Islet Distribution Program 2019. Qualitative & Quantitative Assessment of Human Islets for Distribution Using Dithizone (DTZ). protocols.io
dx.doi.org/10.17504/protocols.io.5yvg7w6

Record Creation Time: 20210329T220540+0000

Record Last Update: 20210329T221108+0000

Data and Source Information

Source: