

THOMSON REUTERS INTEGRITY

QUICK GUIDE SERIES: No. 14



HOW TO QUICKLY FIND A SPECIFIC BIOMARKER AND ASSESS ITS POTENTIAL EARLY IN YOUR RESEARCH PROCESS

Do you need to get an instant idea of how well-researched a biomarker use is?

With the *Biomarkers Module* within *Thomson Reuters Integrity*SM, you can make more informed decisions earlier about which biomarkers have potential for development into a commercial product.

Save time on analyzing diverse information and avoid duplication of efforts by finding all related information to the relevant biomarker use record within *Integrity* while drilling down into this comprehensive database of scientific information available from Thomson Reuters.

This step-by-step guide will show you how to:

- Find a specific biomarker and its use within *Integrity*.
- Find detailed Information about biomarker uses (Indication, Technique, Validity, etc).
- Find all related information to a particular biomarker available in *Integrity*, as well as product/drug records related to a biomarker use.

EXAMPLE SCENARIO: BIOMARKERS WITHIN THOMSON REUTERS INTEGRITY

A research group in a large institution needs access to early-stage data in order to further their drug development activities for the treatment of type 2 diabetes. Having already identified the efficacy biomarker, the researchers would like to use the *Biomarkers Module* of *Integrity* to identify which drugs and compounds for the treatment of the specified condition have been reported to modulate the chosen marker.

1. SEARCH FOR A BIOMARKER AND ITS USES WITHIN INTEGRITY

- Starting in the *Biomarkers Module* of *Integrity* you can run a search using the **Biomarker Name** field to see the record a specific biomarker (Figure 1).
- The results list contains the record for the specified biomarker along with records for related receptors (e.g., Adiponectin receptor 1) and multimarker panels of which adiponectin, in this case, is a component. Click on the name of the biomarker to open the full record and see information about the **Synonyms, Type, Biological Processes**, etc. You can also see the associated indications for which the biomarker has at least one use (Figure 2).

Advanced Search		Session History	Clear Form	Start
Biomarker				
Name	"Adiponectin"	Index	AND	
Optional Value		Index	AND	
Optional Value		Index	AND	

FIGURE 1

Adiponectin	
Synonyms	30 kDa adipocyte complement-related protein; ACP30; ADIPO; APM-1; APM1; adipocyte complement-related 30kDa protein; Adipocyte, C1q and collagen domain-containing protein; Adipose most abundant gene transcript 1 protein; Gelatin-binding protein
Type	Genomic; Protein
Component Of	Adiponectin multimarker panel; Probi
Highest Validity	Life Studies in Humans
Biological Processes	Angiogenesis; Energy Production; Fat Cell Differentiation; Fatty Acid Differentiation; Generation of Precursor Metabolites and Energy; Glucose Homeostasis; Granulocyte Differentiation; Heterotypic Cell-Cell Adhesion; Inhibitory Kinase/Infl Apathic Cascade; Lipid Metabolism; Low-Density Lipoprotein Receptor Biosynthetic Process; Low-density Lipoprotein Particle Clearance; Mixed Cell Apoptosis; Phagocytosis; Protein Kinase A Signaling Cascade; Remodelling; Response to Tumor Necrosis Factor; Tumor Necrosis Factor Production; Tumor Necrosis Factor-Induced Signaling Pathway
Biomarker	Adiponectin (ACPF30) is an adipocyte-derived hormone that plays an important role in the control of glucose and fatty acid metabolism; ACP30 may be a useful biomarker of endocrine, gastrointestinal, cardiovascular, metabolic, renal and neurological disorders as well as of substance abuse and dependence.
Biomarker Use	Select Indication Type: [CLOSE] [CLOSE] [VIEW FILTERS]
Conditions	<input type="checkbox"/> Adiposis, metabolic <input type="checkbox"/> Anorexia <input type="checkbox"/> Aortic coronary syndrome (angina pectoris, unstable) <input type="checkbox"/> Adenoma, adrenocortical <input type="checkbox"/> Aging

FIGURE 2

Advanced Search		Session History	Clear Form	Start
Biomarker				
Name	"Adiponectin"	Index	AND	
Condition (Indication)	"Diabetes type 2"	Index	AND	
Role	"Monitoring Treatment Efficacy"	Index	AND	

FIGURE 3

Tip:

- In the *Biomarkers Module* of *Integrity* a biomarker use is created when there are evidence-based scientific results demonstrating an association between the biomarker and a condition, a drug-induced toxic reaction, or the underlying pathology of the condition/toxic reaction.
- Having reviewed the full record you can now return to the **biomarker search form** to search for specific uses. Set up the search **combining different fields** to retrieve those uses for the biomarker involved in **monitoring treatment efficacy** for the indication of interest: Diabetes type 2 (Figure 3).



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- The results display shows the biomarker record with the relevant uses displayed below (Figure 4):

2. WORKING WITH YOUR DATA

- From this view you can now see more detailed Information about these uses by opening the **Options** pulldown menu on the upper right and selecting **Biomarker Use Record** (Figure 5).
- The **Use Records** contain information about the **Role, Indication, Population, Substrate, Technique, Parameter, Validity, Source**. At the bottom of the record there is an accordeon view (click the down arrow to open) of **linked products with the source references**. The product names are hyperlinked and allow you to click through to the **product record** in *Integrity* (Figure 6).
- The **Integrity Drug Record** provides detailed Information about the compound (Figure 7).

View: Name | Indication: All Condition Indications | Studies Type: All Role: Monitoring Treatment Efficacy

Population	Role	Technique (Substrate)	Parameter	Validity (Method)	Source	Start	End	Count	View
All	Monitoring Treatment Efficacy	ES (Plasma)	NA	Early Studies in Humans	Ref	1	0	1	View
Insulin Resistance	Monitoring Treatment Efficacy	ELISA (Blood)	NA	Experimental	Ref	1	0	1	View
All	Monitoring Treatment Efficacy	ELISA (Not specified)	NA	Early Studies in Humans	Ref	0	2	2	View
All	Monitoring Treatment Efficacy	ELISA (Plasma)	NA	Early Studies in Humans	Ref	1	1	2	View
Metabolic Syndrome	Monitoring Treatment Efficacy	ELISA (Plasma)	NA	Early Studies in Humans	Ref	1	0	1	View
Hypertension	Monitoring Treatment Efficacy	ELISA (Plasma)	NA	Early Studies in Humans	Ref	0	1	1	View
Dyslipidemia	Monitoring Treatment Efficacy	ELISA (Serum)	NA	Early Studies in Humans	Ref	0	1	1	View
All	Monitoring Treatment Efficacy	ELISA (Serum)	NA	Early Studies in Humans	Ref	1	1	2	View
Insulin Resistance	Monitoring Treatment Efficacy	ELISA (Serum)	NA	Early Studies in Humans	Ref	1	0	1	View
Chronic Kidney Disease	Monitoring Treatment Efficacy	ELISA (Serum)	NA	Early Studies in Humans	Ref	1	0	1	View
All	Monitoring Treatment Efficacy	ELISA (Serum)	NA	Experimental	Ref	1	0	1	View
All	Monitoring Treatment Efficacy	Genomic analysis (mRNA)	NA	Experimental	Ref	1	0	1	View
Hypertension	Monitoring Treatment Efficacy	Not specified (Not specified)	NA	Early Studies in Humans	Ref	1	0	1	View
All	Monitoring Treatment Efficacy	Not specified (Not specified)	NA	Early Studies in Humans	Ref	0	0	0	View
All	Monitoring Treatment Efficacy	Not specified (Not specified)	NA	Emerging	Pat	1	0	1	View
Dyslipidemia	Monitoring Treatment Efficacy	Not specified (Not specified)	NA	Late Studies in Humans	Ref	1	0	1	View
Obese	Monitoring Treatment Efficacy	Not specified (Plasma)	NA	Experimental	Ref	1	0	1	View
All	Monitoring Treatment Efficacy	Not specified (Plasma)	NA	Late Studies in Humans	Ref	1	0	1	View
All	Monitoring Treatment Efficacy	Not specified (Serum)	NA	Early Studies in Humans	Ref	1	0	1	View
Obese	Monitoring Treatment Efficacy	Not specified (mRNA)	NA	Experimental	Ref	1	0	1	View
All	Monitoring Treatment Efficacy	RIA (Plasma)	NA	Early Studies in Humans	Ref	1	0	1	View
All	Monitoring Treatment Efficacy	RIA (Plasma)	NA	Early Studies in Humans	Ref	0	1	1	View
All	Monitoring Treatment Efficacy	RIA (Serum)	NA	Late Studies in Humans	Ref	2	0	2	View

FIGURE 4

Options

- Save Query
- Keep Me Posted
- Export Center
- Integrity Reports
- Kit Development Status List
- Kit Milestone List
- Biomarker Use Record
- All Related Information via Quick Search
- Printer Friendly Format

FIGURE 5

Biomarker Use Record

Stemmer: 164965
Study ID: 164965

Summary

Role: Monitoring Treatment Efficacy
 Indication: Diabetes type 2
 Population: All
 Technique: ELISA
 Substrate: Not specified
 Parameter: NA
 Validity: Early Studies in Humans

Source

Ref: 1
 Effects of pioglitazone in addition to metformin improves atherosclerotic deformability in patients with Type 2 diabetes mellitus
 Effects of pioglitazone as add-on to metformin on postprandial increases in glucose and triglyceride levels and on oxidative stress in Japanese patients with Type 2 diabetes mellitus

Product Links

Name	Type	Source
Glimepiride	Therapeutic Agents	Ref: 1 Effects of pioglitazone in addition to metformin improves atherosclerotic deformability in patients with Type 2 diabetes mellitus
Glipizolamide	Therapeutic Agents	Ref: 1 Effects of pioglitazone as add-on to metformin on postprandial increases in glucose and triglyceride levels and on oxidative stress in Japanese patients with Type 2 diabetes mellitus
Metformin hydrochloride	Therapeutic Agents	Ref: 1 Effects of pioglitazone in addition to metformin improves atherosclerotic deformability in patients with Type 2 diabetes mellitus
Etiopitazone hydrochloride	Therapeutic Agents	Ref: 1 Effects of pioglitazone as add-on to metformin on postprandial increases in glucose and triglyceride levels and on oxidative stress in Japanese patients with Type 2 diabetes mellitus

Related Information

Structure | Chemical

FIGURE 6

Entry Number: 164965 **UPDATED**

Chemical Structure

CAS Registry No.: 112520-15-4
105355-27-9 (free base; undefined somer)
111025-46-8 (free base)

Molecular Formula: C19H21ClN2O3S
Molecular Weight: 392.9

Highest Phase: Launched - 1999

Under Active Development

Chemical Name/Description: (±)-5-[4-[2-(5-Ethylpyridin-2-yl)ethoxy]benzyl]thiazolidine-2,4-dione monohydrochloride

Standard InChI: 1S:C19H20N2O3S.ClHCl:1-2-13-3-5-15(20-12-13)9-10-24-16-7-4-14(5-9-15)11-17-16(22)1-19(23)(25-17)/h3-8,12,17H,2,9-11H2,1H3,(H,21,22,23);1H

Standard InChIKey: GHUBYQCDQWRA-UHFFFAOYSA-N

Code Name	Generic Name	Brand Name
AA-10090	Pioglitazone hydrochloride	Actos
U-72107A		Glustin
U-72107E (as AcOH solvate)		Zactos
AD-4833 (free base)		
U-72107 (free base)		

Molecular Mechanism: Insulin Sensitizers
PPARGamma Agonists

Product Category: Thiazolidinediones (Glitazones)

Therapeutic Group: AntiAllergy/Antibsthmatic Drugs
Cardiovascular Diseases (Not Specified)
Cystic Fibrosis, Treatment of
Dermatologic Drugs
Hemorrhagic Stroke, Treatment of
Liver and Biliary Tract Disorders, Treatment of
Neurologic Drugs (Miscellaneous)
Non-Small Cell Lung Cancer Therapy
Pancreatic Cancer Therapy
Prenatal/Pregnancy Therapy
Treatment of Diabetic Complications
Type 1 Diabetes, Agents for
Type 2 Diabetes, Agents for

FIGURE 7