S1 File - Wever et al. 2015 - Determinants of the efficacy of cardiac ischemic preconditioning: a systematic review and meta-analysis of animal studies

Text A - Detailed Methods

This systematic review is based on published results of animal experiments studying the effects of local or remote IPC on MI, which we identified using a systematic, computerized search in MEDLINE (via PubMed) and EMBASE. The inclusion criteria and method of analysis were pre-specified and documented in an *a priori* protocol (see http://www.dcn.ed.ac.uk/camarades//). This review is reported according to the PRISMA guidelines.

1.1 Amendments to the systematic review protocol

We extracted data on three additional study quality indicators, to obtain a comprehensive overview of study quality, and to allow for better comparison with systematic reviews in other fields of research. The additional items were: reporting of a conflict of interest statement (Y/N), reporting of ethical approval of the experiment (Y/N) and reporting of regulation of body temperature within a physiological range during surgery (Y/N). We did not perform meta-analysis on these items.

We omitted the planned subgroup analysis of total risk of bias score due to the poor reporting of many of the risk of bias items, since we expect this would severely hamper the analysis and would likely produce unreliable results.

1.2 Literature search strategy, inclusion and exclusion criteria

The full search strategies for PubMed and EMBASE are included in the supplemental material, and involved the search components "animal"[1, 2], "heart", "ischemia reperfusion injury" and "preconditioning". We searched the databases for published articles up to January 2nd 2014. No language or date restrictions were applied. If necessary, papers in languages other than English were translated by scientists (native speakers for that particular language) within the Radboud university medical center or the University of Edinburgh.

We included studies in the systematic review if they fulfilled all of the following criteria: 1) the study assessed the effect of IPC on myocardial infarction and reported the mean and variance of the infarct size as a percentage of the area at risk (IS/AAR%), as well as the number of animals that these figures were based on; 2) the study was performed in animals *in vivo;* 3) the study was an original full paper which presented unique data. We excluded studies if 1) experiments were performed only in genetically modified animals; 2) animals underwent any co-intervention other than sham IPC or administration of vehicle.

We used Early Review Organizing Software (EROS; Institute of Clinical Effectiveness and Health Policy, Buenos Aires, Argentina) to randomly allocate each reference to two independent reviewers, who screened it for inclusion on the basis of title and abstract. In case of doubt, the whole publication was evaluated. Two independent reviewers subsequently assessed full-text copies of all publications eligible for inclusion and included them if they met our prespecified inclusion criteria. Disagreements were solved by discussion.

1.3 Study characteristics and data extraction

In each publication, we identified all independent comparisons of the infarct size in IPC-treated animals *versus* controls. We extracted data on study design, including the animals used (species, strain, sex, age, weight, and the presence of comorbidities or other conditions), the myocardial infarction model (pre-operative opioid use, anesthetic agent used during surgery, class of anesthetic agent used, site of coronary occlusion, duration of index ischemia and timing of the outcome measure) and the IPC intervention (site of IPC, remote organ, duration of ischemic stimulus, duration of intermittent reperfusion periods, the number of cycles, and interval between IPC and myocardial index ischemia; see supplemental figure SF1). We also recorded bibliographic details such as author, journal, language and year of publication.

We extracted data on infarct size if raw data or group averages, standard deviation (SD) or standard error (SE) and number of animals per group (n) were reported, or could be recalculated. If two or more identical comparisons existed (*e.g.* two separate experiments, with the same control and experimental groups), they were analyzed separately. In case of missing outcome measure data, we attempted to contact authors for additional information. If the data could not be obtained, we used a conservative estimate if possible. In case the group size was reported as a range (*e.g.* 6-9) in combination with an SD, we used the lowest number of animals in our meta-analysis. In case the SE was reported, we used the highest number of animals to recalculate the most conservative estimate of the SD. If no conservative estimate could be made we excluded the comparison from the analysis. If data were presented only graphically, we measured them using digital image analysis software (ImageJ; http://rsbweb.nih.gov/ij/). If multiple experimental groups were compared to the same control group, we corrected the group size of the control group for the number of comparisons made (n/number of comparisons).

1.4 Data handling exceptions

For two comparisons (both from[3]) for which the number of IPC cycles was reported to be 12 or more, we used 12 as the number of cycles in our analysis.

For five comparisons (one each from [4-8]), the duration of the ischemic period of the IPC stimulus differed between cycles. We therefore used the average duration of an ischemic period (total ischemic time/# cycles) in our analysis. The same approach was used for four comparisons in which the duration of the intermittent reperfusion periods differed between cycles (one each from [7, 9-11])

For studies investigating "repeated IPC", *i.e.* applying an interval of one or several days between IPC stimuli, we used the duration of the intermittent reperfusion periods within one IPC stimulus as the intermittent reperfusion duration in our analysis (*e.g.* comparisons from [3, 10, 12-20]). *N.B.* in such cases, the number of IPC cycles used is the total of all IPC cycles in the entire protocol.

One study[8] states that the variance of their data are reported as SD, but are in the SE range. In our meta-analysis, entering these data as SD resulted in an enormous deviation of the study data in terms of variance and weight. We attempted to clarify this issue by contacting the authors, but received no response. We therefore treated the data conservatively and assumed that they were in fact reported as SE.

1.5 Assessment of methodological quality

We used the SYRCLE Risk of Bias tool[21] to assess the risk of bias in the included studies. Two independent reviewers assessed each publication and disagreements were solved by discussion. Concerning the number of excluded animals, we assumed that there had been no exclusion if the number of animals per group mentioned in the materials and methods section was identical to the number stated in the results section or figure legends. In addition, we extracted data on reporting of any measure of randomization and any measure of blinding, in order to distinguish between reporting of measures to report bias and actual risk of bias. We assessed reporting of a sample size calculation an additional study quality indicator.

1.6 Data synthesis and statistical analyses

Data were analyzed using STATA SE, version 11.2 (StataCorp, College Station, TX, USA). All data were extracted in the same unit of analysis (IS/AAR%). For each independent comparison, we calculated an effect size as a raw difference in means (MD; the mean of the experimental group minus the mean of the control group) of IS/AAR% and corresponding 95% confidence interval (CI). To account for anticipated heterogeneity, we pooled effect sizes using random effect meta-analysis, which takes into account the precision of individual studies and the variation between studies and weights each study accordingly. Heterogeneity was quantified using I^2 and T^2 statistics (see [22] for meta-analysis details).

We performed pre-specified subgroup analyses, using meta-regression, to explore sources of heterogeneity and assess the impact methodological and study quality indicators on the observed efficacy of IPC. Covariates assessed were: species, sex, comorbidity, opioid use pre-IPC, site of IPC, number of IPC cycles, duration of one ischemic cycle of IPC, total duration of IPC ischemia and duration of the delay between IPC and IR. For total duration of IPC ischemia, comparisons were stratified using increments (with increasing orders of magnitude) of $\log_{10}(0.4)$ minutes. For IPC to IR delay, comparisons were stratified using increments of $\log_{10}(0.8)$ minutes. The percentage of between-study variance explained by variables of interest was assessed using the T^2 and adjusted R^2 statistic.

We adjusted our significance level using the Holm-Bonferroni method[23] $(1-(1-\alpha)^{1/m})$ to account for multiple comparisons.

We assessed for potential publication bias by visually inspection for asymmetry in funnel plots, performing Duval and Tweedie's trim and fill analysis[24] and Egger's regression analysis[25] for small study effects.

1.7 Sensitivity analyses

To assess the robustness of our findings, sensitivity analysis was performed for the cut-off points for the subgroups of total IPC ischemia and IPC to IR delay. For total IPC ischemia, the increment between categories was changed from $\log_{10}(0.4)$ minutes to $\log_{10}(0.3)$ or $\log_{10}(0.5)$ minutes. For IPC to IR delay, the increment between categories was changed from $\log_{10}(0.8)$ minutes to $\log_{10}(0.7)$ or $\log_{10}(0.9)$ minutes.

Thirteen publications ([26-38]) reported data from a myocardial infarction model in which a coronary-to-carotid artery shunt was used for cardiac reperfusion. We decided to consider this procedure part of the infarction model, rather than a co-intervention, but investigated the effect of our decision by excluding these studies in a sensitivity analysis.

Post-hoc, we tested the robustness of our findings using the MD by re-running our analysis using the standardized difference in means (SMD).

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Text B - Full search strategies

Pubmed	
Heart	heart[MH] OR myocardium[MH] OR heart[TIAB] OR hearts[TIAB] OR cardiac[TIAB] OR myocardial[TIAB] OR myocardium[TIAB] OR myocardia[TIAB] OR myocard[TIAB] OR cardioprotection[TIAB] OR cardioprotective[TIAB] OR coronary[TIAB]
Ischemia-Reperfusion Injury	ischemia[MH] OR "warm ischemia"[MH] OR "cold ischemia"[MH] OR "reperfusion injury"[MH] OR “myocardial ischemia”[MH] OR “coronary occlusion”[MH] OR "heart injuries"[MH] OR "cardiovascular diseases"[MH] OR transplantation[MH] OR "heart transplantation"[MH] OR "primary graft dysfunction"[MH] OR “graft survival”[MH] OR “graft rejection” [MH] OR transplants[MH] OR ((ischemia[TIAB] OR ischaemia[TIAB] OR ischemic[TIAB] OR ischaemic[TIAB]) AND (“reperfusion”[tiab] OR reoxygenation[tiab] OR re-oxygenation[tiab])) OR "reperfusion injury"[TIAB] OR "reperfusion injuries"[TIAB] OR "I/R"[TIAB] OR "IRI"[TIAB] OR occlusion[TIAB] OR transplantation[TIAB] OR transplantations[TIAB] OR transplant[TIAB] OR transplants[TIAB] OR graft[TIAB] OR grafts[TIAB]
Preconditioning	"ischemic preconditioning"[MH] OR "IPC"[TIAB] OR "RIPC"[TIAB] OR "brief ischemia"[TIAB] OR "brief ischaemia"[TIAB] OR preconditioning[TIAB] OR "pre conditioning"[TIAB] OR "pre-conditioning"[TIAB] OR "transient ischaemia"[TIAB] OR "transient ischemia"[TIAB] OR "intermittent ischaemia"[TIAB] OR "intermittent ischemia"[TIAB] OR “remote conditioning”[TIAB]
Animals	(“animal experimentation”[MeSH Terms] OR “models, animal”[MeSH Terms] OR “invertebrates”[MeSH Terms] OR “Animals”[Mesh:noexp] OR “animal population groups”[MeSH Terms] OR “chordata”[MeSH Terms:noexp] OR “chordata, nonvertebrate”[MeSH Terms] OR “vertebrates”[MeSH Terms:noexp] OR “amphibians”[MeSH Terms] OR “birds”[MeSH Terms] OR “fishes”[MeSH Terms] OR “reptiles”[MeSH Terms] OR “mammals”[MeSH Terms:noexp] OR “primates”[MeSH Terms:noexp] OR “artiodactyla”[MeSH Terms] OR “carnivora”[MeSH Terms] OR “cetacea”[MeSH Terms] OR “chiroptera”[MeSH Terms] OR “elephants”[MeSH Terms] OR “hyraxes”[MeSH Terms] OR “insectivora”[MeSH Terms] OR “lagomorpha”[MeSH Terms] OR “marsupialia”[MeSH Terms] OR “monotremata”[MeSH Terms] OR “perissodactyla”[MeSH Terms] OR “rodentia”[MeSH Terms] OR “scandentia”[MeSH Terms] OR “sirenia”[MeSH Terms] OR “xenarthra”[MeSH Terms] OR “haplorhini”[MeSH Terms:noexp] OR “strepsirhini”[MeSH Terms] OR “platyrrhini”[MeSH Terms] OR “tarsii”[MeSH Terms] OR “catarrhini”[MeSH Terms:noexp] OR “cercopithecidae”[MeSH Terms] OR “hylobatidae”[MeSH Terms] OR “hominidae”[MeSH Terms:noexp] OR “gorilla gorilla”[MeSH Terms] OR “pan paniscus”[MeSH Terms] OR “pan troglodytes”[MeSH Terms] OR “pongo pygmaeus”[MeSH Terms]) OR ((animals[tiab] OR animal[tiab] OR mice[Tiab] OR mus[Tiab] OR mouse[Tiab] OR murine[Tiab] OR woodmouse[tiab] OR rats[Tiab] OR rat[Tiab] OR murinae[Tiab] OR muridae[Tiab] OR cottonrat[tiab] OR cottonrats[tiab] OR hamster[tiab] OR hamsters[tiab] OR cricetinae[tiab] OR rodentia[Tiab] OR rodent[Tiab] OR rodents[Tiab] OR pigs[Tiab] OR pig[Tiab] OR swine[tiab] OR swines[tiab] OR piglets[tiab] OR piglet[tiab] OR boar[tiab] OR boars[tiab] OR “sus scrofa”[tiab] OR ferrets[tiab] OR ferret[tiab] OR polecat[tiab] OR polecats[tiab] OR “mustela putorius”[tiab] OR “guinea pigs”[Tiab] OR “guinea

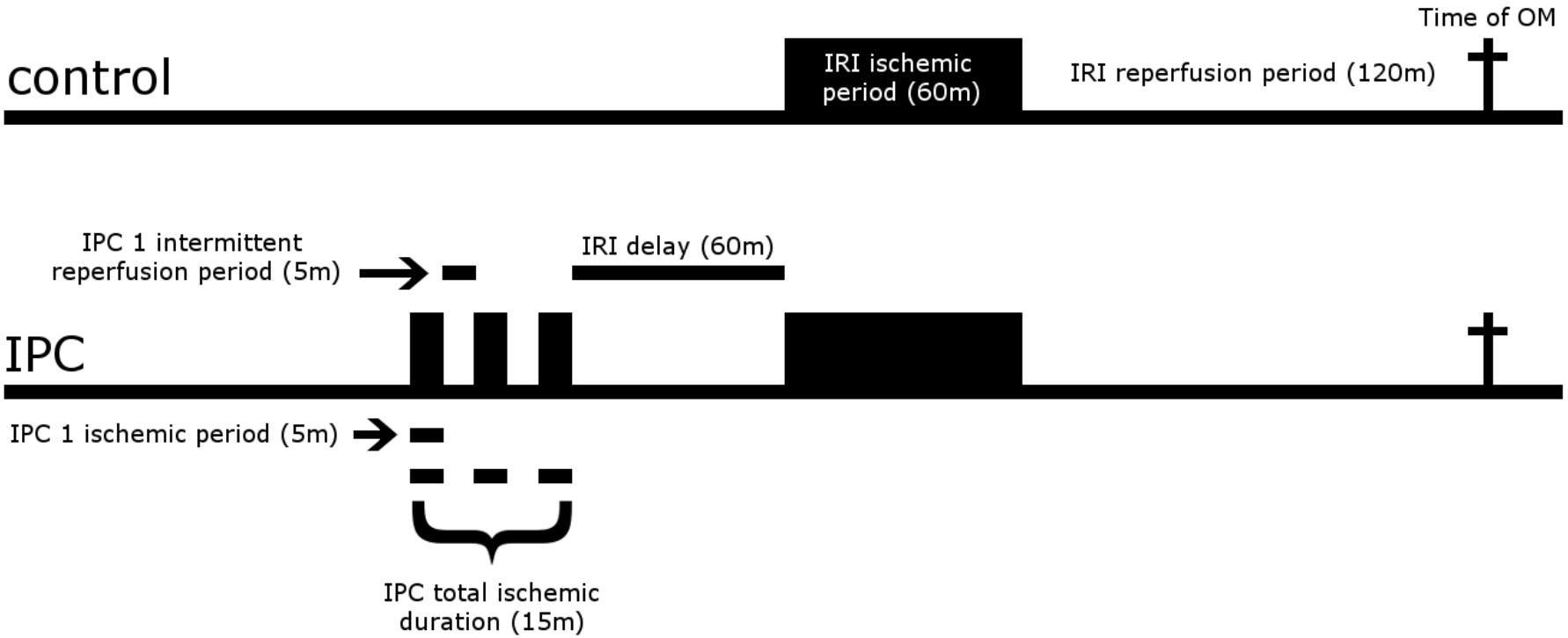
	pig”[Tiab] OR cavia[Tiab] OR callithrix[Tiab] OR marmoset[Tiab] OR marmosets[Tiab] OR cebuella[Tiab] OR hapale[Tiab] OR octodon[Tiab] OR chinchilla[Tiab] OR chinchillas[Tiab] OR gerbillinae[Tiab] OR gerbil[Tiab] OR gerbils[Tiab] OR jird[Tiab] OR jirds[Tiab] OR merione[Tiab] OR meriones[Tiab] OR rabbits[Tiab] OR rabbit[Tiab] OR hares[Tiab] OR hare[Tiab] OR diptera[Tiab] OR flies[Tiab] OR fly[Tiab] OR dipteral[Tiab] OR drosophila[Tiab] OR drosophilidae[Tiab] OR cats[Tiab] OR cat[Tiab] OR carus[Tiab] OR felis[Tiab] OR nematoda[Tiab] OR nematode[Tiab] OR nematodes[Tiab] OR sipunculida[Tiab] OR dogs[Tiab] OR dog[Tiab] OR canine[Tiab] OR canines[Tiab] OR canis[Tiab] OR sheep[Tiab] OR sheeps[Tiab] OR mouflon[Tiab] OR mouflons[Tiab] OR ovis[Tiab] OR goats[Tiab] OR goat[Tiab] OR capra[Tiab] OR capras[Tiab] OR rupicapra[Tiab] OR rupicapras[Tiab] OR chamois[Tiab] OR haplorhini[Tiab] OR monkey[Tiab] OR monkeys[Tiab] OR anthropoidea[Tiab] OR anthropoids[Tiab] OR saguinus[Tiab] OR tamarin[Tiab] OR tamarins[Tiab] OR leontopithecus[Tiab] OR hominidae[Tiab] OR ape[Tiab] OR apes[Tiab] OR “pan paniscus”[Tiab] OR bonobo[Tiab] OR bonobos[Tiab] OR “pan troglodytes”[Tiab] OR gibbon[Tiab] OR gibbons[Tiab] OR siamang[Tiab] OR siamangs[Tiab] OR nomascus[Tiab] OR symphalangus[Tiab] OR chimpanzee[Tiab] OR chimpanzees[Tiab] OR prosimian[Tiab] OR prosimians[Tiab] OR “bush baby”[Tiab] OR bush babies[Tiab] OR galagos[Tiab] OR galago[Tiab] OR pongidae[Tiab] OR gorilla[Tiab] OR gorillas[Tiab] OR “pongo pygmaeus”[Tiab] OR orangutan[Tiab] OR orangutans[Tiab] OR lemur[Tiab] OR lemurs[Tiab] OR lemuridae[Tiab] OR horse[Tiab] OR horses[Tiab] OR equus[Tiab] OR cow[Tiab] OR calf[Tiab] OR bull[Tiab] OR chicken[Tiab] OR chickens[Tiab] OR gallus[Tiab] OR quail[Tiab] OR bird[Tiab] OR birds[Tiab] OR quails[Tiab] OR poultry[Tiab] OR poultries[Tiab] OR fowl[Tiab] OR fowls[Tiab] OR reptile[Tiab] OR reptilia[Tiab] OR reptiles[Tiab] OR snakes[Tiab] OR snake[Tiab] OR lizard[Tiab] OR lizards[Tiab] OR alligator[Tiab] OR alligators[Tiab] OR crocodile[Tiab] OR crocodiles[Tiab] OR turtle[Tiab] OR turtles[Tiab] OR amphibian[Tiab] OR amphibians[Tiab] OR amphibia[Tiab] OR frog[Tiab] OR frogs[Tiab] OR bombina[Tiab] OR salientia[Tiab] OR toad[Tiab] OR toads[Tiab] OR “epidalea calamita”[Tiab] OR salamander[Tiab] OR salamanders[Tiab] OR eel[Tiab] OR eels[Tiab] OR fish[Tiab] OR fishes[Tiab] OR pisces[Tiab] OR catfish[Tiab] OR catfishes[Tiab] OR siluriformes[Tiab] OR arius[Tiab] OR heteropneustes[Tiab] OR sheatfish[Tiab] OR perch[Tiab] OR perches[Tiab] OR percidae[Tiab] OR perca[Tiab] OR trout[Tiab] OR trouts[Tiab] OR char[Tiab] OR chars[Tiab] OR salvelinus[Tiab] OR minnow[Tiab] OR cyprinidae[Tiab] OR carps[Tiab] OR carp[Tiab] OR zebrafish[Tiab] OR zebrafishes[Tiab] OR goldfish[Tiab] OR goldfishes[Tiab] OR guppy[Tiab] OR guppies[Tiab] OR chub[Tiab] OR chubs[Tiab] OR tinca[Tiab] OR barbels[Tiab] OR barbus[Tiab] OR pimephales[Tiab] OR promelas[Tiab] OR “poecilia reticulata”[Tiab] OR mullet[Tiab] OR mullets[Tiab] OR eel[Tiab] OR eels[Tiab] OR seahorse[Tiab] OR seahorses[Tiab] OR mugil curema[Tiab] OR atlantic cod[Tiab] OR shark[Tiab] OR sharks[Tiab] OR catshark[Tiab] OR anguilla[Tiab] OR salmonid[Tiab] OR salmonids[Tiab] OR whitefish[Tiab] OR whitefishes[Tiab] OR salmon[Tiab] OR salmons[Tiab] OR sole[Tiab] OR solea[Tiab] OR lamprey[Tiab] OR lampreys[Tiab] OR pumpkinseed[Tiab] OR sunfish[Tiab] OR sunfishes[Tiab] OR tilapia[Tiab] OR tilapias[Tiab] OR turbot[Tiab] OR turbots[Tiab] OR flatfish[Tiab] OR flatfishes[Tiab] OR sciuridae[Tiab] OR squirrel[Tiab] OR squirrels[Tiab] OR chipmunk[Tiab] OR chipmunks[Tiab] OR suslik[Tiab] OR susliks[Tiab] OR vole[Tiab] OR voles[Tiab] OR lemming[Tiab] OR lemmings[Tiab] OR muskrat[Tiab] OR muskrats[Tiab] OR lemmus[Tiab] OR otter[Tiab] OR otters[Tiab] OR marten[Tiab] OR martens[Tiab] OR martes[Tiab] OR weasel[Tiab] OR badger[Tiab] OR badgers[Tiab] OR ermine[Tiab] OR mink[Tiab] OR minks[Tiab] OR sable[Tiab] OR

	sables[Tiab] OR gulo[Tiab] OR gulos[Tiab] OR wolverine[Tiab] OR wolverines[Tiab] OR mustela[Tiab] OR llama[Tiab] OR llamas[Tiab] OR alpaca[Tiab] OR alpacas[Tiab] OR camelid[Tiab] OR camelids[Tiab] OR guanaco[Tiab] OR guanacos[Tiab] OR chiroptera[Tiab] OR chiropteras[Tiab] OR bat[Tiab] OR bats[Tiab] OR fox[Tiab] OR foxes[Tiab] OR iguana[Tiab] OR iguanas[Tiab] OR xenopus laevis[Tiab] OR parakeet[Tiab] OR parakeets[Tiab] OR parrot[Tiab] OR parrots[Tiab] OR donkey[Tiab] OR donkeys[Tiab] OR mule[Tiab] OR mules[Tiab] OR zebra[Tiab] OR zebras[Tiab] OR shrew[Tiab] OR shrews[Tiab] OR bison[Tiab] OR bisons[Tiab] OR buffalo[Tiab] OR buffaloes[Tiab] OR deer[Tiab] OR deers[Tiab] OR bear[Tiab] OR bears[Tiab] OR panda[Tiab] OR pandas[Tiab] OR "wild hog"[Tiab] OR "wild boar"[Tiab] OR fitchew[Tiab] OR fitch[Tiab] OR beaver[Tiab] OR beavers[Tiab] OR jerboa[Tiab] OR jerboas[Tiab] OR capybara[Tiab] OR capybaras[Tiab]) NOT medline[sb])

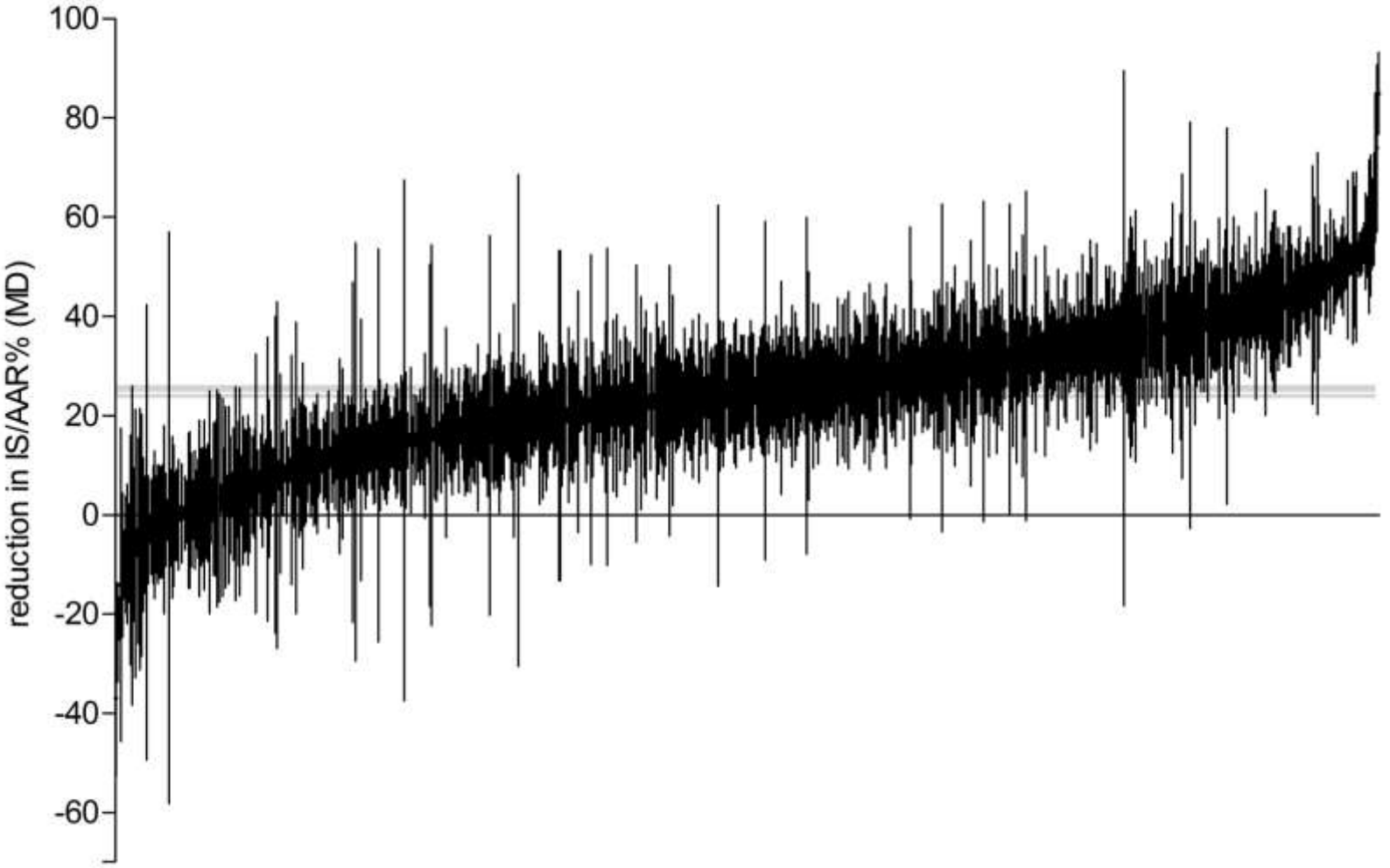
EMBASE	
Heart	exp heart/ or (heart or hearts or cardiac or myocardial or myocardium or myocardia or myocard or cardioprotection or cardioprotective or coronary).ti,ab.
Ischemia-Reperfusion Injury	exp reperfusion injury/ or exp cold ischemia/ or exp primary graft dysfunction/ or exp transplantation/ or (((ischemia or ischaemia or ischemia or ischaemia) and (reperfusion or reoxygenation or re-oxygenation)) or reperfusion injury or reperfusion injuries or I/r or IRI or occlusion or transplantation or transplantations or transplant or transplants or graft or grafts).ti,ab.
Preconditioning	exp ischemic preconditioning/ or (IPC or RIPC or brief ischemia or brief ischaemia or preconditioning or pre conditioning or pre-conditioning or transient ischaemia or transient ischemia or intermittent ischaemia or intermittent ischemia or remote conditioning).ti,ab.
Animals	exp animal experiment/ or exp animal model/ or exp experimental animal/ or exp transgenic animal/ or exp male animal/ or exp female animal/ or exp juvenile animal/ OR animal/ OR chordata/ OR vertebrate/ OR tetrapod/ OR exp fish/ OR amniote/ OR exp amphibia/ OR mammal/ OR exp reptile/ OR exp sauropsid/ OR therian/OR exp monotremate/ OR placental mammals/ OR exp marsupial/ OR Euarchontoglires/ OR exp Afrotheria/ OR exp Boreoeutheria/ OR exp Laurasiatheria/ OR exp Xenarthra/ OR primate/ OR exp Dermoptera/ OR exp Glires/ OR exp Scandentia/ OR Haplorhini/ OR exp prosimian/ OR simian/ OR exp tarsiiform/ OR Catarrhini/ OR exp Platyrrhini/ OR ape/ OR exp Cercopithecidae/ OR hominid/ OR exp hylobatidae/ OR exp chimpanzee/ OR exp gorilla/ OR exp orang utan/ OR (animal OR animals OR pisces OR fish OR fishes OR catfish OR catfishes OR sheatfish OR silurus OR arius OR heteropneustes OR clarias OR gariepinus OR fathead minnow OR fathead minnows OR pimephales OR promelas OR cichlidae OR trout OR trouts OR char OR chars OR salvelinus OR salmo OR oncorhynchus OR guppy OR guppies OR millionfish OR poecilia OR goldfish OR goldfishes OR carassius OR auratus OR mullet OR mullets OR mugil OR curema OR shark OR sharks OR cod OR cods OR gadus OR morhua OR carp OR carps OR cyprinus OR carpio OR killifish OR eel OR eels OR anguilla OR zander OR sander OR lucioperca OR stizostedion OR turbot OR turbots OR psetta OR flatfish OR flatfishes OR plaice OR pleuronectes OR platessa OR tilapia OR tilapias OR oreochromis OR sarotherodon OR common sole OR dover sole OR solea OR zebrafish OR zebrafishes OR danio OR rerio OR seabass OR dicentrarchus OR labrax OR morone OR lamprey OR lampreys OR petromyzon OR pumpkinseed OR

	pumpkinseeds OR lepomis OR gibbosus OR herring OR clupea OR harengus OR amphibia OR amphibian OR amphibians OR anura OR salientia OR frog OR frogs OR rana OR toad OR toads OR bufo OR xenopus OR laevis OR bombina OR epidalea OR calamita OR salamander OR salamanders OR newt OR newts OR triturus OR reptilia OR reptile OR reptiles OR bearded dragon OR pogona OR vitticeps OR iguana OR iguanas OR lizard OR lizards OR anguis fragilis OR turtle OR turtles OR snakes OR snake OR aves OR bird OR birds OR quail OR quails OR coturnix OR bobwhite OR colinus OR virginianus OR poultry OR poultries OR fowl OR fowls OR chicken OR chickens OR gallus OR zebra finch OR taeniopygia OR guttata OR canary OR canaries OR serinus OR canaria OR parakeet OR parakeets OR grasskeet OR parrot OR parrots OR psittacine OR psittacines OR shelduck OR tadorna OR goose OR geese OR branta OR leucopsis OR woodlark OR lullula OR flycatcher OR ficedula OR hypoleuca OR dove OR doves OR geopelia OR cuneata OR duck OR ducks OR greylag OR graylag OR anser OR harrier OR circus pygargus OR red knot OR great knot OR calidris OR canutus OR godwit OR limosa OR lapponica OR meleagris OR gallopavo OR jackdaw OR corvus OR monedula OR ruff OR philomachus OR pugnax OR lapwing OR peewit OR plover OR vanellus OR swan OR cygnus OR columbianus OR bewickii OR gull OR chroicocephalus OR ridibundus OR albifrons OR great tit OR parus OR aythya OR fuligula OR streptopelia OR risoria OR spoonbill OR platalea OR leucorodia OR blackbird OR turdus OR merula OR blue tit OR cyanistes OR pigeon OR pigeons OR columba OR pintail OR anas OR starling OR sturnus OR owl OR athene noctua OR pochard OR ferina OR cockatiel OR nymphicus OR hollandicus OR skylark OR alauda OR tern OR sterna OR teal OR crecca OR oystercatcher OR haematopus OR ostralegus OR shrew OR shrews OR sorex OR araneus OR crocidura OR russula OR european mole OR talpa OR chiroptera OR bat OR bats OR eptesicus OR serotinus OR myotis OR dasycneme OR daubentonii OR pipistrelle OR pipistrellus OR cat OR cats OR felis OR catus OR feline OR dog OR dogs OR canis OR canine OR canines OR otter OR otters OR lutra OR badger OR badgers OR meles OR fitchew OR fitch OR foumart or foulmart OR ferrets OR ferret OR polecat OR polecats OR mustela OR putorius OR weasel OR weasels OR fox OR foxes OR vulpes OR common seal OR phoca OR vitulina OR grey seal OR halichoerus OR horse OR horses OR equus OR equine OR equidae OR donkey OR donkeys OR mule OR mules OR pig OR pigs OR swine OR swines OR hog OR hogs OR boar OR boars OR porcine OR piglet OR piglets OR sus OR scrofa OR llama OR llamas OR lama OR glama OR deer OR deers OR cervus OR elaphus OR cow OR cows OR bos taurus OR bos indicus OR bovine OR bull OR bulls OR cattle OR bison OR bisons OR sheep OR sheeps OR ovis aries OR ovine OR lamb OR lambs OR mouflon OR mouflons OR goat OR goats OR capra OR caprine OR chamois OR rupicapra OR leporidae OR lagomorpha OR lagomorph OR rabbit OR rabbits OR oryctolagus OR cuniculus OR laprine OR hares OR lepus OR rodentia OR rodent OR rodents OR murinae OR mouse OR mice OR mus OR musculus OR murine OR woodmouse OR apodemus OR rat OR rats OR rattus OR norvegicus OR guinea pig OR guinea pigs OR cavia OR porcellus OR hamster OR hamsters OR mesocricetus OR cricetulus OR cricetus OR gerbil OR gerbils OR jird OR jirds OR meriones OR unguiculatus OR jerboa OR jerboas OR jaculus OR chinchilla OR chinchillas OR beaver OR beavers OR castor fiber OR castor canadensis OR sciuridae OR squirrel OR squirrels OR sciurus OR chipmunk OR chipmunks OR marmot OR marmots OR marmota OR suslik OR susliks OR spermophilus OR cynomys OR cottonrat OR cottonrats OR sigmodon OR vole OR voles OR microtus OR myodes OR glareolus OR primate OR primates OR prosimian OR prosimians OR lemur OR lemurs OR lemuridae OR loris OR bush baby OR bush babies OR bushbaby OR bushbabies OR galago OR galagos OR anthropoidea OR

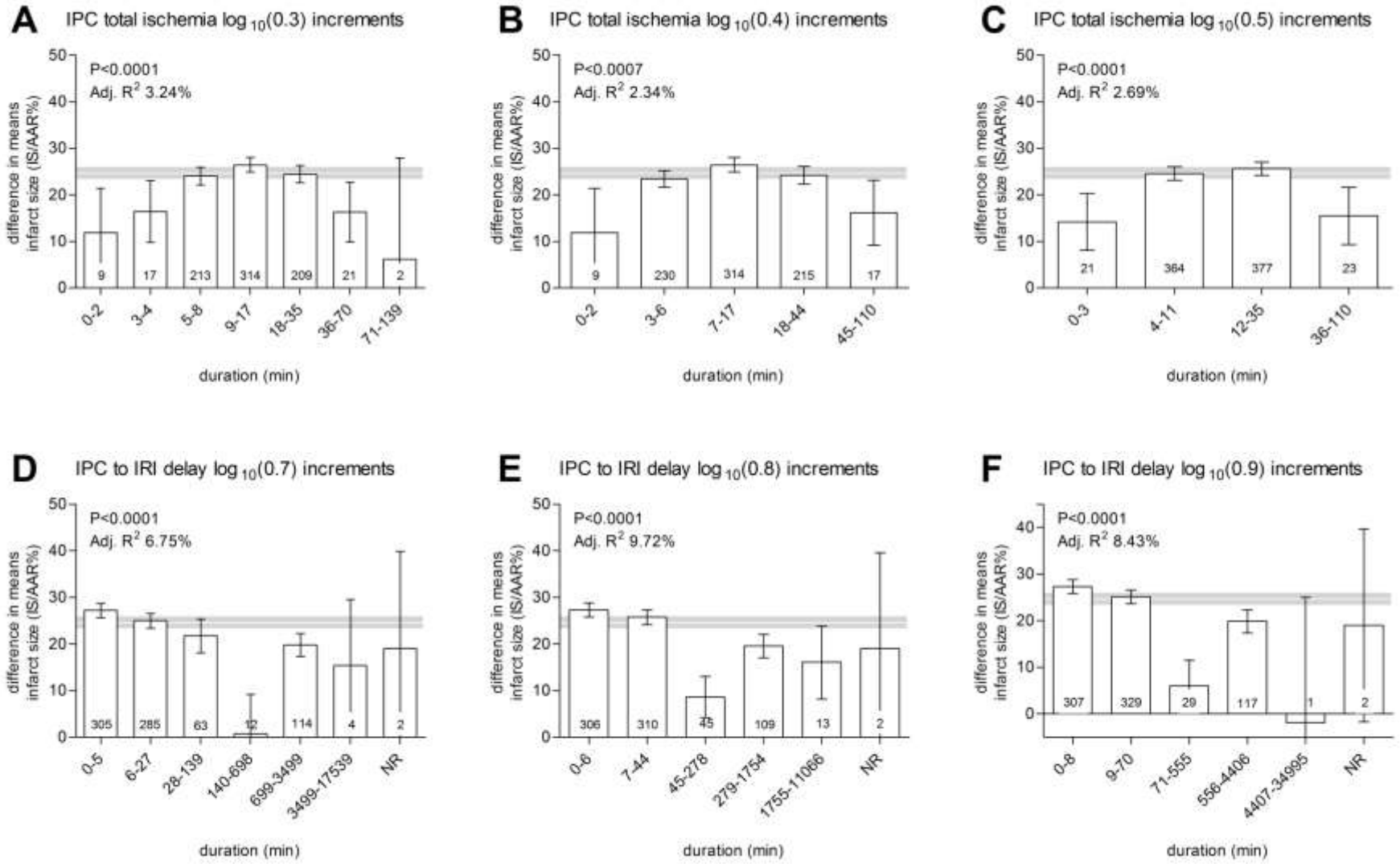
	anthropoids OR simian OR simians OR monkey OR monkeys OR marmoset OR marmosets OR callithrix OR cebuella OR tamarin OR tamarins OR saguinus OR leontopithecus OR squirrel monkey OR squirrel monkeys OR saimiri OR night monkey OR night monkeys OR owl monkey OR owl monkeys OR douroucoulis OR aotus OR spider monkey OR spider monkeys OR ateles OR baboon OR baboons OR papio OR rhesus monkey OR macaque OR macaca OR mulatta OR cynomolgus OR fascicularis OR green monkey OR green monkeys OR chlorocebus OR vervet OR vervets OR pygerythrus OR hominoidea OR ape OR apes OR hylobatidae OR gibbon OR gibbons OR siamang OR siamangs OR nomascus OR symphalangus OR hominidae OR orangutan OR orangutans OR pongo OR chimpanzee OR chimpanzees OR pan troglodytes OR bonobo OR bonobos OR pan paniscus OR gorilla OR gorillas OR troglodytes).ti,ab.



Supplemental Figure A| Ischemia-reperfusion injury (IRI) and ischemic preconditioning (IPC) characteristics for a typical control and experimental group. Control animals undergo a waiting period, followed by 60 minutes of coronary occlusion (ischemic period) and 120 minutes of reperfusion. In the experimental group, the applied IPC protocol consists of 3 cycles of 5 minutes of ischemia, interspersed by 5 minutes of reperfusion. The total duration of IPC ischemia is 15 minutes. The delay to myocardial IRI in this protocol is 60 minutes.



Supplemental Figure B| Individual effect estimates of all 785 included comparisons. Data are presented as raw difference in means (MD) in infarct size as a percentage of the area at risk (IS/AAR%). Comparisons are sorted by MD from low to high. The vertical error bars represent the 95% confidence intervals for the individual estimates. Horizontal white line and grey bar represent the pooled effect estimate and its 95% confidence interval.



Supplemental Figure C| Sensitivity analysis total duration IPC ischemia (A-C) and IPC to IRI delay (D-F). Data are presented as raw difference in means (MD) in infarct size as a percentage of the area at risk (IS/AAR%). Horizontal white line and grey bar represent the pooled effect estimate and its 95% confidence interval. The number of comparisons contributing data is indicated in each bar. Panels B and D represent the original subgroups, other panels represent alternative subgroups based on slightly smaller (A and D) or larger (C and F) log increments.

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Alcindor2004[1]	dog	NR	m/f	none	local	NA	4	5	20	5
Alizadeh2011[2]	rat	NR	m	none	local	NA	1	5	5	5
Alkhulaifi1993_ip0.5[3]	rat	NR	m	none	local	NA	1	5	5	0.5
Alkhulaifi1993_ip1[3]	rat	NR	m	none	local	NA	1	5	5	1
Amour2009[4]	rabbit	NR	m	none	local	NA	1	5	5	15
Andreadou2004[5]	rabbit	NR	m	none	local	NA	2	5	10	10
Andreadou2006[6]	rabbit	NR	m	none	local	NA	2	5	10	10
Andreadou2011_1cy[7]	rabbit	NR	m	none	local	NA	1	5	5	10
Andreadou2011_4cy[7]	rabbit	NR	m	none	local	NA	4	4	16	10
Aouam2005_1cy[8]	rabbit	NR	m	none	local	NA	1	5	5	10
Aouam2005_6cy[8]	rabbit	NR	m	none	local	NA	6	4	24	4
Argaud2004[9]	rabbit	yes	m	none	local	NA	1	5	5	5
Argaud2005a[10]	rabbit	yes	m	none	local	NA	1	5	5	5
Argaud2005b[11]	rabbit	NR	m	none	local	NA	1	5	5	5
Argaud2005c[12]	rabbit	NR	m	none	local	NA	1	5	5	5
Argaud2008[13]	rabbit	NR	m	none	local	NA	1	5	5	5
Auchampach1992[14]	dog	NR	m/f	none	local	NA	1	5	5	10
Auchampach1993[15]	dog	NR	m/f	none	local	NA	1	5	5	10
Auchampach2004[16]	dog	NR	m/f	none	local	NA	4	5	20	10
Aye1999_1cy[17]	rat	NR	m	none	local	NA	1	3	3	10
Aye1999_3cy[17]	rat	NR	m	none	local	NA	3	3	9	5
Baines1997_1cy[18]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Baines1997_4cy[18]	rabbit	NR	m/f	none	local	NA	4	5	20	10
Baines1999[19]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Barbosa1996_01.25ip[20]	rat	NR	f	none	local	NA	1	1	1	5
Barbosa1996_02.5ip[20]	rat	NR	f	none	local	NA	1	3	3	5
Barbosa1996_05ip[20]	rat	NR	f	none	local	NA	1	5	5	5
Barbosa1996_10ip[20]	rat	NR	f	none	local	NA	1	10	10	5
Barbosa1996_2cy[20]	rat	NR	f	none	local	NA	2	5	10	5
Barbosa1996_2cy10ip[20]	rat	NR	f	none	local	NA	2	10	20	5
Barbosa1996_4cy[20]	rat	NR	f	none	local	NA	4	5	20	5

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Basalay2012_exp1[21]	rat	NR	m	none	remote	hind limb	1	15	15	10
Basalay2012_exp2[21]	rat	NR	m	none	remote	hind limb	1	15	15	10
Basalay2012_exp3[21]	rat	NR	m	none	remote	hind limb	1	15	15	10
Baumert2007[22]	pig	NR	NR	none	local	NA	4	5	20	5
Baxter1994[23]	rabbit	yes	m	none	local	NA	4	5	20	1440
Baxter1995[24]	rabbit	yes	m	none	local	NA	4	5	20	1440
Baxter1997_1cy[25]	rabbit	yes	m	none	local	NA	1	5	5	2880
Baxter1997_2cy[25]	rabbit	yes	m	none	local	NA	2	5	10	2880
Baxter1997_4cy[25]	rabbit	yes	m	none	local	NA	4	5	20	2880
Baxter1997_ip24h[25]	rabbit	yes	m	none	local	NA	4	5	20	1440
Baxter1997_ip48h[25]	rabbit	yes	m	none	local	NA	4	5	20	2880
Baxter1997_ip72h[25]	rabbit	yes	m	none	local	NA	4	5	20	4320
Baxter1997_ip96h[25]	rabbit	yes	m	none	local	NA	4	5	20	5760
Belosjorow1999[26]	rabbit	NR	NR	none	local	NA	1	5	5	10
Belosjorow2003[27]	rabbit	NR	NR	none	local	NA	1	5	5	10
Bencsik2010[28]	rat	NR	NR	none	local	NA	5	4	20	1440
Bernardo1999[29]	rabbit	NR	m	none	local	NA	4	5	20	1440
Bibli2013[30]	rabbit	NR	m	none	local	NA	2	5	10	10
Blokhin2008a[31]	rat	NR	m	none	local	NA	1	5	5	5
Blokhin2008b_20is[32]	rat	NR	m	none	local	NA	3	5	15	5
Blokhin2008b_30is[32]	rat	NR	m	none	local	NA	3	5	15	5
Blokhin2008b_40is[32]	rat	NR	m	none	local	NA	3	5	15	5
Blokhin2008b_50is[32]	rat	NR	m	none	local	NA	3	5	15	5
Blokhin2008b_60is[32]	rat	NR	m	none	local	NA	3	5	15	5
Boengler2007_old[33]	mouse	NR	m/f	senescence	local	NA	1	10	10	10
Boengler2007_young[33]	mouse	NR	m/f	none	local	NA	1	10	10	10
Brandenburger2012[34]	rat	NR	NR	none	remote	hind limb	4	5	20	5
Bukhari1995[35]	sheep	NR	m/f	none	local	NA	3	5	15	5
Burckhartt1995_ip2h[36]	rabbit	NR	NR	none	local	NA	1	5	5	120
Burckhartt1995_ip4h[36]	rabbit	NR	NR	none	local	NA	1	5	5	240
Burns1996_adult[37]	sheep	NR	m/f	none	local	NA	3	5	15	5

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Burns1996_old[37]	sheep	NR	m/f	senescence	local	NA	3	5	15	5
Cai2008[38]	mouse	NR	m	none	local	NA	1	10	10	5
Cai2013[39]	mouse	NR	m	none	remote	hind limb	3	5	15	1440
Canyon2005[40]	rat	NR	m	none	local	NA	3	3	9	3
Cason1997[41]	rabbit	NR	NR	none	local	NA	1	5	5	15
Chazov2001[42]	rat	NR	m	none	local	NA	3	5	15	5
Chen1997[43]	rabbit	NR	m	none	local	NA	4	5	20	10
Chen2005[44]	rat	NR	NR	none	remote	hind limb	4	5	20	5
Chen2008[45]	rat	NR	m	none	local	NA	2	3	6	5
Cheng2009[46]	rat	NR	m	none	local	NA	3	5	15	5
Cheng2010a[47]	rat	NR	m	none	local	NA	4	5	20	5
Cheng2010b[48]	rat	NR	m	none	local	NA	4	5	20	5
Chiari2002[49]	rabbit	yes	m/f	brain death	local	NA	2	5	10	10
Chien1996[50]	rabbit	NR	m	none	local	NA	1	5	5	10
Chien1999[51]	rabbit	NR	m	none	local	NA	1	5	5	10
Cohen1991[52]	rabbit	NR	NR	none	local	NA	1	5	5	10
Cohen1994_1cy[53]	rabbit	none	NR	none	local	NA	1	5	5	10
Cohen1994_rep[53]	rabbit	none	NR	none	local	NA	12	5	60	10
Cohen1994_rep+1cy[53]	rabbit	none	NR	none	local	NA	12	5	60	10
Cohen1999[54]	rabbit	yes	m/f	none	local	NA	1	5	5	10
Cohen2000[55]	rabbit	yes	m/f	none	local	NA	1	5	5	10
Colantonio2004[56]	dog	NR	NR	none	local	NA	1	10	10	10
Dai2003[57]	rat	NR	f	none	local	NA	3	3	9	5
Dai2009_healthy[58]	rat	NR	f	none	local	NA	3	3	9	5
Dai2009_hyperten[58]	rat	NR	f	hypertension	local	NA	3	3	9	5
Dairaku2002[59]	rat	NR	m	none	local	NA	3	3	9	3
Daleau2001_120is[60]	rabbit	NR	m	none	local	NA	2	5	10	10
Daleau2001_30is[60]	rabbit	NR	m	none	local	NA	2	5	10	10
Das2006[61]	rabbit	NR	m	none	local	NA	1	5	5	10
Das2007[62]	rabbit	NR	m	none	local	NA	1	5	5	10
Das2012[63]	rabbit	NR	m	none	local	NA	1	5	5	10

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Dawn2002[64]	rabbit	NR	m	none	local	NA	6	4	24	1440
Dawn2004a[65]	mouse	NR	NR	none	local	NA	6	4	24	1440
Dawn2004b[66]	mouse	NR	NR	none	local	NA	6	4	24	1440
Demiryurek2005a[67]	rat	NR	m	none	local	NA	1	5	5	5
Demiryurek2005b[68]	rat	NR	m	none	local	NA	1	5	5	5
DePaulis2013[69]	rat	NR	m	none	local	NA	3	3	9	5
Depre2010_ip24h[70]	pig	NR	NR	none	local	NA	2	10	20	1440
Depre2010_ip60[70]	pig	NR	NR	none	local	NA	6	10	60	60
Deuchar2007[71]	rat	NR	m	none	local	NA	3	3	9	5
DeZeeuw2001_10ip[72]	pig	NR	m/f	none	remote	brain	1	10	10	20
DeZeeuw2001_30ip[72]	pig	NR	m/f	none	remote	brain	1	30	30	30
Ding2000[73]	rabbit	NR	m	none	local	NA	2	5	10	10
Ding2001[74]	rabbit	NR	m	none	remote	RAO	1	10	10	10
Dong2004[75]	rat	NR	m	none	remote	hind limb	1	10	10	10
Ebel2003_diabetic[76]	rabbit	NR	m	diabetes	local	NA	1	5	5	1440
Ebel2003_healthy1[76]	rabbit	NR	m	none	local	NA	1	5	5	1440
Ebel2003_healthy2[76]	rabbit	NR	m	none	local	NA	1	5	5	1440
Ebel2003_hypergly[76]	rabbit	NR	m	hyperglycaemia	local	NA	1	5	5	1440
Ebel2009_diabetic[77]	rat	NR	m	diabetes	local	NA	3	3	9	5
Ebel2009_healthy[77]	rat	NR	m	none	local	NA	3	3	9	5
Eckle2006_1cy[78]	mouse	NR	m/f	none	local	NA	1	5	5	5
Eckle2006_2cy[78]	mouse	NR	m/f	none	local	NA	2	5	10	5
Eckle2006_3cy[78]	mouse	NR	m/f	none	local	NA	3	5	15	5
Eckle2006_4cy[78]	mouse	NR	m/f	none	local	NA	4	5	20	5
Eckle2012[79]	mouse	NR	m	none	local	NA	4	5	20	5
Erikson1996[80]	dog	NR	NR	none	local	NA	4	5	20	5
Fang2008[81]	rat	NR	m	none	local	NA	3	5	15	5
Farhat2001_braindead[82]	rabbit	NR	NR	brain death	local	NA	1	5	5	5
Farhat2001_healthy[82]	rabbit	NR	NR	none	local	NA	1	5	5	5
Fisher2002_ip15m[83]	mouse	NR	m	none	local	NA	3	5	15	15
Fisher2002_ip24h[83]	mouse	NR	m	none	local	NA	3	5	15	1440

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Flack3rd1991[84]	pig	NR	m/f	none	local	NA	4	5	20	5
Flaherty2008[85]	mouse	NR	m	none	local	NA	6	4	24	4
Flynn2005_1cy[86]	rabbit	NR	m	none	local	NA	1	5	5	10
Flynn2005_2cy[86]	rabbit	NR	m	none	local	NA	1	5	5	10
Fryer1998[87]	rat	NR	m	none	local	NA	1	5	5	5
Fryer1999_1cy[88]	rat	NR	m	none	local	NA	1	5	5	5
Fryer1999_3cy[88]	rat	NR	m	none	local	NA	3	5	15	5
Fryer2000[89]	rat	NR	m	none	local	NA	1	5	5	5
Fryer2001a[90]	rat	NR	m	none	local	NA	1	5	5	5
Fryer2001b[91]	rat	NR	m	none	local	NA	1	5	5	5
Fryer2001c[92]	rat	NR	m	none	local	NA	1	5	5	5
Fryer2002[93]	rat	NR	m	none	local	NA	1	5	5	5
Fukuma2000[94]	rabbit	NR	m	none	local	NA	1	5	5	5
Galagudza2007a_diabetic[95]	rat	NR	m	diabetes	local	NA	1	5	5	5
Galagudza2007a_healthy[95]	rat	NR	m	none	local	NA	1	5	5	5
Galagudza2007b_1cy[96]	rat	NR	m	none	local	NA	1	5	5	5
Galagudza2007b_3cy[96]	rat	NR	m	none	local	NA	3	5	15	5
Galagudza2007b_RIPC[96]	rat	NR	m	none	remote	MAO	1	5	5	15
Galagudza2009[97]	rat	NR	m	none	local	NA	3	4	12	5
Gao2000[98]	mouse	NR	m/f	none	local	NA	3	5	15	10
Gao2003_ip10[99]	rat	NR	m	none	local	NA	3	5	15	10
Gao2003_ip24h[99]	rat	NR	m	none	local	NA	3	5	15	1440
Gao2012_IPC[100]	rat	NR	m	none	local	NA	3	5	15	5
Gao2012_RIPC[100]	rat	NR	m	none	remote	hind limb	3	5	15	5
Ge2011_exp1[101]	mouse	NR	NR	hyperglycaemia	local	NA	4	5	20	5
Ge2011_exp2[101]	mouse	NR	NR	hyperglycaemia	local	NA	4	5	20	5
Gerczuk2012[102]	rat	NR	m	none	local	NA	3	3	9	5
Gho1996_IPC[103]	rat	NR	m	none	local	NA	1	15	15	10
Gho1996_MAO[103]	rat	NR	m	none	remote	MAO	1	15	15	10
Gho1996_RAO[103]	rat	NR	m	none	remote	RAO	1	15	15	10
Gomez2011[104]	mouse	yes	m	none	local	NA	1	5	5	5

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Gomoll1996_02ip[105]	ferret	NR	m	none	local	NA	1	2	2	10
Gomoll1996_05ip[105]	ferret	NR	m	none	local	NA	1	5	5	10
Gomoll1996_10ip[105]	ferret	NR	m	none	local	NA	1	10	10	10
Gomoll1996_75is[105]	ferret	NR	m	none	local	NA	1	5	5	10
Gomoll1996_90is[105]	ferret	NR	m	none	local	NA	1	5	5	10
Goto1993[106]	rabbit	NR	m	none	local	NA	2	2	4	5
Gourine2005[107]	rat	NR	m	none	local	NA	3	5	15	5
Gozal2005[108]	rabbit	NR	NR	none	local	NA	1	5	5	10
Griol-Charhbili2005[109]	mouse	NR	m	none	local	NA	3	3	9	5
Gross1992[110]	dog	NR	m/f	none	local	NA	1	5	5	10
Gross2009[111]	dog	NR	m/f	none	local	NA	1	5	5	10
Grover1992[112]	dog	NR	m/f	none	local	NA	1	5	5	10
Grover1996[113]	dog	NR	m/f	none	local	NA	1	5	5	10
Grund1997_1cy[114]	pig	NR	m/f	none	local	NA	1	10	10	30
Grund1997_2cy[114]	pig	NR	m/f	none	local	NA	2	10	20	30
Gu2008[115]	dog	NR	m/f	hyperglycaemia	local	NA	4	5	20	5
Gumina1999_1cy[116]	dog	NR	m/f	none	local	NA	1	5	5	10
Gumina1999_4cy[116]	dog	NR	m/f	none	local	NA	4	5	20	5
Gumina1999_60is[116]	dog	NR	m/f	none	local	NA	1	5	5	10
Gumina2001[117]	dog	NR	m/f	none	local	NA	1	5	5	10
Gumina2005_1cy[118]	dog	NR	m/f	none	local	NA	1	10	10	10
Gumina2005_1cyip2h[118]	dog	NR	m/f	none	local	NA	1	10	10	120
Gumina2005_2cy[118]	dog	NR	m/f	none	local	NA	2	10	20	10
Guo1998_early[119]	mouse	NR	m	none	local	NA	6	4	24	10
Guo1998_late24hR[119]	mouse	NR	m	none	local	NA	6	4	24	1440
Guo1998_late4R[119]	mouse	NR	m	none	local	NA	6	4	24	1440
Guo1999_ip10[120]	mouse	NR	m	none	local	NA	6	4	24	10
Guo1999_ip24h[120]	mouse	NR	m	none	local	NA	6	4	24	1440
Guo2001_1cy[121]	mouse	NR	m	none	local	NA	1	4	4	10
Guo2001_6cy[121]	mouse	NR	m	none	local	NA	6	4	24	4
Guo2007[122]	rat	NR	NR	none	local	NA	2	5	10	5

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Guo2012_exp1[123]	mouse	NR	m	none	local	NA	6	4	24	1440
Guo2012_exp2[123]	mouse	NR	m	none	local	NA	6	4	24	1440
Guo2012_exp3[123]	mouse	NR	m	none	local	NA	6	4	24	1440
Gysembergh1998[124]	rabbit	yes	NR	none	local	NA	1	5	5	5
Haessler1994_iso[125]	rabbit	NR	NR	none	local	NA	1	5	5	10
Haessler1994_kxy[125]	rabbit	NR	NR	none	local	NA	1	5	5	10
Haessler1994_pen[125]	rabbit	NR	NR	none	local	NA	1	5	5	10
Haessler1997[126]	rabbit	NR	NR	none	local	NA	1	5	5	10
Hale1992_exp1[127]	rabbit	NR	m	none	local	NA	2	5	10	5
Hale1992_exp2[127]	rabbit	NR	m	none	local	NA	2	5	10	5
Hale1999_1cy[128]	rabbit	NR	NR	none	local	NA	1	5	5	5
Hale1999_2cy[128]	rabbit	NR	NR	none	local	NA	2	7	14	5
Halkos2004[129]	dog	yes	NR	none	local	NA	1	5	5	10
Hampton2003[130]	mouse	NR	NR	none	local	NA	3	5	15	1440
Haruna1998[131]	rabbit	NR	f	none	local	NA	1	5	5	10
Hatori2001[132]	pig	NR	m/f	none	local	NA	1	5	5	15
Hausenloy2012[133]	pig	yes	NR	none	remote	hind limb	4	5	20	5
He2009[134]	rabbit	NR	f	none	local	NA	3	5	15	5
Heinen2011_IPC[135]	rat	NR	m	none	local	NA	4	5	20	5
Heinen2011_IPC+RIPC[135]	rat	NR	m	none	local+remote	hind limb	4	5	20	5
Heinen2011_RIPC[135]	rat	NR	m	none	remote	hind limb	4	5	20	5
HemetsbergerH2008[136]	pig	NR	NR	none	local	NA	2	5	10	5
HemetsbergerR2008[137]	pig	NR	NR	none	local	NA	2	5	10	5
Hiasa2001[138]	rat	NR	m	none	local	NA	4	5	20	10
Hibert2013[139]	rat	NR	m	none	remote	hind limb	1	10	10	10
Hide1996[140]	rabbit	yes	m	none	local	NA	1	5	5	15
Hinokiyama2003[141]	pig	NR	m/f	none	local	NA	1	5	5	15
Hiroi2010_1ip[142]	rat	NR	m	none	local	NA	4	1	4	1440
Hiroi2010_3ip[142]	rat	NR	m	none	local	NA	4	3	12	1440
Hoshida1994[143]	dog	NR	m/f	none	local	NA	4	5	20	5
Htun1998[144]	pig	yes	m	none	local	NA	2	10	20	30

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Hu2002_adult[145]	rat	NR	m	none	remote	MAO	6	4	24	1440
Hu2002_old[145]	rat	NR	m	senescence	remote	MAO	6	4	24	1440
Huang1999[146]	pig	NR	NR	none	local	NA	2	10	20	10
Huang2004[147]	rabbit	NR	NR	none	local	NA	2	10	20	10
Huang2011[148]	rabbit	NR	NR	none	local	NA	2	10	20	10
Huang2013[149]	rat	NR	NR	none	local	NA	2	10	20	10
Iliodromitis1994_1cy10[150]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Iliodromitis1994_1cy60[150]	rabbit	NR	m/f	none	local	NA	1	5	5	60
Iliodromitis1994_2cy[150]	rabbit	NR	m/f	none	local	NA	2	5	10	60
Iliodromitis1994_3cy[150]	rabbit	NR	m/f	none	local	NA	3	5	15	10
Iliodromitis1996a_1ip[151]	rabbit	NR	NR	none	local	NA	1	1	1	10
Iliodromitis1996a_5ip[151]	rabbit	NR	NR	none	local	NA	1	5	5	10
Iliodromitis1996b_2cy45[152]	rabbit	NR	NR	none	local	NA	2	5	10	10
Iliodromitis1996b_2cy60[152]	rabbit	NR	NR	none	local	NA	2	5	10	10
Iliodromitis1996b_2cy75[152]	rabbit	NR	NR	none	local	NA	2	5	10	10
Iliodromitis1996b_ip60[152]	rabbit	NR	NR	none	local	NA	1	5	5	60
Iliodromitis1996b_ip65[152]	rabbit	NR	NR	none	local	NA	1	5	5	65
Iliodromitis1996b_ip70[152]	rabbit	NR	NR	none	local	NA	1	5	5	70
Iliodromitis1996b_ip75[152]	rabbit	NR	NR	none	local	NA	1	5	5	75
Iliodromitis1996b_ip80[152]	rabbit	NR	NR	none	local	NA	1	5	5	80
Iliodromitis1997_1cy[153]	rabbit	NR	NR	none	local	NA	1	5	5	10
Iliodromitis1997_2cy[153]	rabbit	NR	NR	none	local	NA	2	5	10	10
Iliodromitis1997_4cy[153]	rabbit	NR	NR	none	local	NA	4	5	20	10
Iliodromitis1997_6cy[153]	rabbit	NR	NR	none	local	NA	6	5	30	10
Iliodromitis1997_8cy[153]	rabbit	NR	NR	none	local	NA	8	5	40	10
Iliodromitis2002a_1cy[154]	rabbit	NR	m	none	local	NA	1	5	5	10
Iliodromitis2002a_3cy[154]	rabbit	NR	m	none	local	NA	3	5	15	10
Iliodromitis2002b[155]	rabbit	NR	m	none	local	NA	1	5	5	10
Iliodromitis2003_3cy[156]	rabbit	NR	m	none	local	NA	3	5	15	10
Iliodromitis2003_3cy90[156]	rabbit	NR	m	none	local	NA	3	5	15	90
Iliodromitis2003_8cy[156]	rabbit	NR	m	none	local	NA	8	5	40	10

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Iliodromitis2004[157]	rabbit	NR	m	none	local	NA	3	5	15	10
Iliodromitis2006a[158]	rabbit	NR	m	none	local	NA	2	5	10	10
Iliodromitis2006b_exp1[159]	rabbit	NR	m	hypercholesterolemia	local	NA	2	5	10	10
Iliodromitis2006b_exp2[159]	rabbit	NR	m	hypercholesterolemia	local	NA	2	5	10	10
Iliodromitis2008_3cy[160]	rabbit	NR	m	none	local	NA	3	5	15	10
Iliodromitis2008_8cy[160]	rabbit	NR	m	none	local	NA	8	5	40	10
Iliodromitis2013_20ip[161]	rabbit	NR	m	none	local	NA	1	20	20	12
Iliodromitis2013_5ip+20ip[161]	rabbit	NR	m	none	local	NA	3	10	30	12
Iliodromitis2013_5ip20is[161]	rabbit	NR	m	none	local	NA	2	5	10	10
Iliodromitis2013_5ip40is[161]	rabbit	NR	m	none	local	NA	2	5	10	10
Imagawa1997[162]	rabbit	yes	m	none	local	NA	4	5	20	2880
Imagawa1998[163]	rabbit	yes	m	none	local	NA	1	5	5	10
Imagawa1999[164]	rabbit	yes	m	none	local	NA	4	5	20	2880
Ismaeil1999[165]	rabbit	NR	NR	none	local	NA	1	5	5	15
Iwamoto1991[166]	rabbit	NR	m	none	local	NA	4	5	20	5
Jaberansari2001_2cy[167]	pig	NR	m/f	none	local	NA	2	5	10	1440
Jaberansari2001_4cy[167]	pig	NR	m/f	none	local	NA	4	5	20	1440
Jancso2004_2cy[168]	pig	NR	m/f	none	local	NA	2	2	4	1440
Jancso2004_4cy[168]	pig	NR	m/f	none	local	NA	4	5	20	1440
Jansco2005[169]	rabbit	NR	NR	none	local	NA	4	5	20	1440
Ji2013_diabetic[170]	rat	NR	m	diabetes	local	NA	2	5	10	5
Ji2013_healthy[170]	rat	NR	m	none	local	NA	2	5	10	5
Jiao2002[171]	rat	NR	m	none	local	NA	2	5	10	10
Jung2000_healthy[172]	rabbit	NR	m	none	local	NA	2	5	10	10
Jung2000_hyperchol[172]	rabbit	NR	m	hypercholesterolemia	local	NA	2	5	10	10
Junhua1997[173]	rabbit	NR	NR	none	local	NA	4	5	20	1440
Kalakech2013_mouse[174]	mouse	NR	m	none	remote	hind limb	4	5	20	5
Kalakech2013_rat[174]	rat	NR	m	none	remote	hind limb	4	5	20	5
Kapadia1997[175]	pig	NR	NR	none	local	NA	2	10	20	15
Kara 2004[176]	rat	NR	m	none	local	NA	1	5	5	5
Kara2006[177]	rat	NR	m	none	local	NA	1	5	5	5

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Kariya1997[178]	rabbit	NR	m	none	local	NA	1	5	5	5
Katakam2007_lean[179]	rat	NR	m	none	local	NA	1	5	5	5
Katakam2007_obese[179]	rat	NR	m	obese	local	NA	1	5	5	5
Kersten1997[180]	dog	NR	NR	none	local	NA	4	5	20	5
Kersten1998[181]	dog	NR	NR	hyperglycaemia	local	NA	4	5	20	5
Kersten2000_diabetic[182]	dog	NR	NR	diabetes	local	NA	4	5	20	5
Kersten2000_healthy[182]	dog	NR	NR	none	local	NA	4	5	20	5
Kingma1999[183]	rabbit	NR	m	none	local	NA	2	5	10	10
Kingma2011[184]	dog	yes	m/f	none	remote	RAO	4	5	20	5
Kingma2013[185]	dog	yes	m/f	none	local	NA	4	5	20	5
Kirsch2000_braindead[186]	rabbit	NR	NR	brain death	local	NA	1	3	3	3
Kirsch2000_healthy[186]	rabbit	NR	NR	none	local	NA	1	3	3	3
Kis2003[187]	rabbit	yes	m	none	local	NA	4	5	20	1440
Kitakaze1994a[188]	dog	NR	NR	none	local	NA	4	5	20	5
Kitakaze1994b_anesth[189]	dog	NR	NR	none	local	NA	4	5	20	5
Kitakaze1994b_concious[189]	dog	NR	NR	none	local	NA	4	5	20	5
Kitakaze1996a[190]	dog	NR	NR	none	local	NA	4	5	20	5
Kitakaze1996b[191]	dog	NR	NR	none	local	NA	4	5	20	5
Kitakaze2000[192]	dog	NR	NR	none	local	NA	4	5	20	5
Kocoglu2008[193]	rat	NR	m	none	local	NA	1	5	5	5
Kohler2007[194]	mouse	NR	NR	none	local	NA	4	5	20	5
Kojima1995[195]	rat	NR	m	none	local	NA	1	5	5	10
Kolettis2013[196]	rat	NR	m	none	local	NA	2	5	10	10
Koneru2007[197]	rat	NR	m	none	local	NA	4	4	16	4
Koning1994a_ip120[198]	pig	NR	NR	none	local	NA	1	10	10	120
Koning1994a_ip15[198]	pig	NR	NR	none	local	NA	1	10	10	15
Koning1994a_ip180[198]	pig	NR	NR	none	local	NA	1	10	10	180
Koning1994a_ip240[198]	pig	NR	NR	none	local	NA	1	10	10	240
Koning1994a_ip60[198]	pig	NR	NR	none	local	NA	1	10	10	60
Koning1994b_ip15[199]	pig	NR	NR	none	local	NA	1	10	10	15
Koning1994b_ip60[199]	pig	NR	NR	none	local	NA	1	10	10	60

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Kositprapa2001[200]	rabbit	NR	m	none	local	NA	4	5	20	1440
Kouchi1998[201]	rabbit	NR	f	none	local	NA	1	5	5	10
Kremastinos2000_healthy[202]	rabbit	NR	m	none	local	NA	1	5	5	10
Kremastinos2000_hyperchol[202]	rabbit	NR	m	hypercholesterolemia	local	NA	1	5	5	10
Kristensen2004[203]	pig	NR	NR	none	local	NA	2	10	20	30
Kudej2006_ip10[204]	pig	yes	NR	none	local	NA	2	10	20	10
Kudej2006_ip24h[204]	pig	yes	NR	none	local	NA	2	10	20	1440
Kunuthur2012_exp1[205]	mouse	NR	m	none	local	NA	1	5	5	5
Kunuthur2012_exp2[205]	mouse	NR	m	none	local	NA	1	5	5	5
Kuzmin2000[206]	rat	NR	m	none	local	NA	3	5	15	5
Kuzume2004_1cy[207]	rabbit	NR	NR	none	local	NA	1	5	5	10
Kuzume2004_2cy[207]	rabbit	NR	NR	none	local	NA	2	5	10	10
Kuzuya1993_ip03h[208]	dog	NR	m/f	none	local	NA	4	5	20	1440
Kuzuya1993_ip05[208]	dog	NR	m/f	none	local	NA	4	5	20	5
Kuzuya1993_ip12h[208]	dog	NR	m/f	none	local	NA	4	5	20	180
Kuzuya1993_ip24h[208]	dog	NR	m/f	none	local	NA	4	5	20	720
Landim2013_healthy[209]	rat	NR	m	none	local	NA	3	3	9	3
Landim2013_hyperchol[209]	rat	NR	m	hypercholesterolemia	local	NA	3	3	9	3
Lang2006_IPC[210]	rat	NR	m	none	local	NA	3	5	15	5
Lang2006_RIPC[210]	rat	NR	m	none	remote	RAO	1	10	10	20
Lange2006[211]	rabbit	NR	m	none	local	NA	1	5	5	30
Lankford2006[212]	mouse	NR	m	none	local	NA	3	5	15	10
Larsen2007[213]	pig	NR	f	none	local	NA	2	5	10	5
Lasley1995[214]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Lazou2006[215]	rabbit	NR	m	none	local	NA	1	5	5	10
Lee2000[216]	dog	NR	NR	none	local	NA	1	5	5	10
Lee2004_bif1cy[217]	rabbit	NR	NR	none	local	NA	1	5	5	10
Lee2004_bif3cy[217]	rabbit	NR	NR	none	local	NA	3	5	15	10
Lee2004_bif5cy[217]	rabbit	NR	NR	none	local	NA	5	5	25	10
Lee2004_bif7cy[217]	rabbit	NR	NR	none	local	NA	7	5	35	10
Lee2004_trif1cy[217]	rabbit	NR	NR	none	local	NA	1	5	5	10

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Lee2004_trif3cy[217]	rabbit	NR	NR	none	local	NA	3	5	15	10
Lee2004_trif5cy[217]	rabbit	NR	NR	none	local	NA	5	5	25	10
Li_G1990_01cy[218]	dog	NR	m	none	local	NA	1	5	5	10
Li_G1990_06cy[218]	dog	NR	m	none	local	NA	6	5	30	10
Li_G1990_12cy[218]	dog	NR	m	none	local	NA	12	5	60	10
Li_Q2003[219]	mouse	NR	m	none	local	NA	6	4	24	1440
Li_R2009[220]	rat	NR	m	none	local	NA	3	5	15	5
Li_S2008_IPC[221]	rat	NR	NR	none	local	NA	3	5	15	5
Li_S2008_RIPC[221]	rat	NR	NR	none	remote	hind limb	9	5	45	1440
Li_S2009_IPC[222]	rat	NR	NR	none	local	NA	3	5	15	5
Li_S2009_RIPC[222]	rat	NR	NR	none	remote	hind limb	9	5	45	1440
Li_S2010_IPC[223]	rat	NR	m	none	local	NA	3	5	15	5
Li_S2010_RIPC[223]	rat	NR	m	none	remote	hind limb	9	5	45	1440
Li_W2003[224]	rabbit	NR	m	none	local	NA	4	5	20	1440
Li_X2012a[225]	pig	NR	NR	none	local	NA	3	5	15	5
Li_X2012b[226]	pig	NR	m/f	none	local	NA	3	5	15	5
Li_Y1992a_ip05[227]	rat	NR	f	none	local	NA	3	3	9	5
Li_Y1992a_ip1h[227]	rat	NR	f	none	local	NA	3	3	9	60
Li_Y1992a_ip2h[227]	rat	NR	f	none	local	NA	3	3	9	120
Li_Y1992a_ip3h[227]	rat	NR	f	none	local	NA	3	3	9	180
Li_Y1992b[228]	rat	NR	f	none	local	NA	3	5	15	5
Li_Y1993a[229]	rat	NR	f	none	local	NA	3	3	9	5
Li_Y1993b[230]	rat	NR	f	none	local	NA	3	3	9	5
Li_Y1994_ip05[231]	rat	NR	f	none	local	NA	3	3	9	5
Li_Y1994_ip1h[231]	rat	NR	f	none	local	NA	3	3	9	60
Li_Y1994_ip60ip[231]	rat	NR	f	none	local	NA	6	3	18	5
Li_Y1995[232]	rat	NR	f	none	local	NA	3	3	9	5
Li_Y2011[233]	mouse	NR	m	none	local	NA	3	5	15	1440
Liao2013_convent[234]	mouse	NR	m	none	local	NA	3	5	15	5
Liao2013_lungrec[234]	mouse	NR	m	none	local	NA	3	5	15	5
Liaudet2001_mouse[235]	mouse	NR	NR	none	local	NA	4	5	20	10

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Liaudet2001_rat[235]	rat	NR	m	none	local	NA	4	5	20	5
Lie2010[236]	pig	NR	f	none	local	NA	2	10	20	30
Liem2001_1cy[237]	rat	NR	m	none	local	NA	1	15	15	10
Liem2001_3cy[237]	rat	NR	m	none	local	NA	3	3	9	3
Liem2005_01cyip70[238]	rat	NR	m	none	local	NA	1	15	15	70
Liem2005_04cyip70[238]	rat	NR	m	none	local	NA	4	15	60	70
Liem2005_2cy[238]	rat	NR	m	none	local	NA	2	15	30	10
Liem2005_3cy[238]	rat	NR	m	none	local	NA	3	3	9	5
Liem2005_6cy[238]	rat	NR	m	none	local	NA	6	15	90	10
Liem2005_7cy[238]	rat	NR	m	none	local	NA	7	10	70	5
Liem2005_ip010[238]	rat	NR	m	none	local	NA	1	15	15	10
Liem2005_ip090[238]	rat	NR	m	none	local	NA	1	15	15	90
Liem2005_ip175[238]	rat	NR	m	none	local	NA	1	15	15	175
Liem2005_IPC+RIPC[238]	rat	NR	m	none	local+remote	MAO	6	15	90	10
Liem2005_RIPC[238]	rat	NR	m	none	remote	MAO	2	15	30	10
Lim2007_30is[239]	mouse	NR	m/f	none	local	NA	1	5	5	5
Lim2007_45is[239]	mouse	NR	m/f	none	local	NA	1	5	5	5
Lim2010[240]	mouse	NR	m	none	remote	hind limb	3	5	15	5
Liu1993a[241]	rat	NR	m	diabetes	local	NA	3	5	15	5
Liu1993b[242]	rat	NR	m	none	local	NA	3	5	15	5
Liu1994[243]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Liu2005[244]	rat	NR	m	none	local	NA	3	5	15	1440
Liu2008[245]	rat	NR	m	none	local	NA	5	4	20	4
LiuG1992a[246]	rabbit	NR	m/f	none	local	NA	1	5	5	10
LiuG1992b[247]	rabbit	NR	m	none	local	NA	1	5	5	10
LiuY1992_1cy[248]	rat	NR	m	none	local	NA	1	5	5	10
LiuY1992_3cy[248]	rat	NR	m	none	local	NA	3	5	15	5
Loke1998[249]	dog	NR	m/f	none	local	NA	3	5	15	10
Lott1996[250]	rat	NR	m	none	local	NA	2	5	10	5
Lotz2011[251]	rabbit	NR	m	none	remote	RAO	3	10	30	10
Lou2003[252]	rat	none	m	none	local	NA	3	5	15	5

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Lu2009[253]	mouse	NR	NR	none	local	NA	3	5	15	5
Lu2011[254]	rat	NR	m	none	local	NA	3	5	15	5
Lu2012_1cy[255]	rat	NR	m	none	remote	hind limb	1	5	5	5
Lu2012_3cy[255]	rat	NR	m	none	remote	hind limb	3	5	15	5
Luo2004[256]	rat	NR	m	none	local	NA	4	3	12	1440
Manintveld2005[257]	rat	NR	m	none	local	NA	1	15	15	10
Manintveld2011_1cy[258]	rat	NR	NR	none	local	NA	1	15	15	10
Manintveld2011_3cy[258]	rat	NR	NR	none	local	NA	3	3	9	5
Marber1993[259]	rabbit	yes	NR	none	local	NA	4	5	20	1440
Martin1997[260]	pig	NR	m/f	none	local	NA	1	10	10	10
Matsuda1993[261]	dog	NR	m/f	none	local	NA	4	5	20	5
Matsumura2000[262]	rat	NR	m	none	local	NA	1	3	3	10
McVey1999a[263]	rat	NR	m	none	local	NA	3	3	9	5
McVey1999b[264]	dog	NR	NR	none	local	NA	1	5	5	10
Mei1998[265]	dog	NR	NR	none	local	NA	1	5	5	10
Miki1996[266]	rabbit	NR	m	none	local	NA	1	2	2	5
Miki1998a[267]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Miki1998b[268]	rabbit	NR	m	none	local	NA	1	5	5	5
Miki1999_histo[269]	rabbit	none	m/f	none	local	NA	4	5	20	1440
Miki1999_TTC[269]	rabbit	none	m/f	none	local	NA	4	5	20	1440
Miller1999_2cy[270]	mouse	NR	NR	none	local	NA	3	5	15	5
Miller1999_3cy[270]	mouse	NR	NR	none	local	NA	2	5	10	5
Minamino1996_ip005[271]	dog	NR	m/f	none	local	NA	4	5	20	5
Minamino1996_ip030[271]	dog	NR	m/f	none	local	NA	4	5	20	30
Minamino1996_ip060[271]	dog	NR	m/f	none	local	NA	4	5	20	60
Minamino1996_ip120[271]	dog	NR	m/f	none	local	NA	4	5	20	120
Miura1991_1cy[272]	rabbit	NR	m	none	local	NA	1	5	5	5
Miura1991_2cy[272]	rabbit	NR	m	none	local	NA	2	5	10	5
Miura1991_2ip[272]	rabbit	NR	m	none	local	NA	2	2	4	5
Miura1992[273]	rabbit	NR	m	none	local	NA	1	2	2	5
Miura1998_1cy[274]	rabbit	NR	m	none	local	NA	1	5	5	5

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Miura1998_2cy[274]	rabbit	NR	m	none	local	NA	2	5	10	5
Mizumura1995[275]	dog	NR	m/f	none	local	NA	1	5	5	10
Mizumura1996_2.5ip[276]	dog	NR	m/f	none	local	NA	1	3	3	10
Mizumura1996_5ip[276]	dog	NR	m/f	none	local	NA	1	5	5	10
Mizumura1997_2.5ip[277]	dog	NR	m/f	none	local	NA	1	3	3	10
Mizumura1997_5ip[277]	dog	NR	m/f	none	local	NA	1	5	5	10
Morgan1999[278]	rabbit	NR	NR	none	local	NA	3	5	15	120
Mortensen2006[279]	pig	none	NR	none	local	NA	2	10	20	30
Mullenheim2001a[280]	rabbit	NR	m	none	local	NA	1	5	5	10
Mullenheim2001b[281]	rabbit	NR	m	none	local	NA	1	5	5	1440
Mullenheim2001c_ip10[282]	rabbit	NR	m	none	local	NA	1	5	5	10
Mullenheim2001c_ip24h[282]	rabbit	NR	m	none	local	NA	1	5	5	1440
Mullenheim2001c_ip24hip[282]	rabbit	NR	m	none	local	NA	2	5	10	10
Mullenheim2003_ip24h[283]	rabbit	none	m	none	local	NA	1	5	5	1440
Mullenheim2003_ip24hip[283]	rabbit	none	m	none	local	NA	2	5	10	10
Munch-Ellingsen1997[284]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Munch-Ellingsen1998[285]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Murry1986_3his[286]	dog	NR	m/f	none	local	NA	4	5	20	5
Murry1986_40is[286]	dog	NR	m/f	none	local	NA	4	5	20	5
Murry1991_ip120[287]	dog	NR	m/f	none	local	NA	1	15	15	120
Murry1991_ip5[287]	dog	NR	m/f	none	local	NA	1	15	15	5
Nadtochiy2009[288]	mouse	NR	m	none	local	NA	3	5	15	5
Nakae2000_2.5ip[289]	rabbit	NR	m	none	local	NA	1	3	3	20
Nakae2000_5ip[289]	rabbit	NR	m	none	local	NA	1	5	5	20
Nakano1997_3ip[290]	rabbit	NR	m	none	local	NA	1	3	3	5
Nakano1997_5ip[290]	rabbit	NR	m	none	local	NA	1	5	5	5
Naumenko2010[291]	rat	NR	m	none	local	NA	3	3	9	3
Nawada1997[292]	rabbit	NR	f	none	local	NA	1	5	5	10
Neckar2002_2cy[293]	rat	NR	m	none	local	NA	2	5	10	5
Neckar2002_5cy[293]	rat	NR	m	none	local	NA	5	5	25	5
Nieszner2002_diabetic[294]	rabbit	NR	m	diabetes	local	NA	3	2	6	2

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Nieszner2002_healthy[294]	rabbit	NR	m	none	local	NA	3	2	6	2
Nishihara2006[295]	rat	NR	m	none	local	NA	1	5	5	5
Nithipatikom2006a[296]	dog	NR	m/f	none	local	NA	1	5	5	10
Nithipatikom2006b[297]	dog	NR	m/f	none	local	NA	1	5	5	10
Node1997[298]	dog	NR	m/f	none	local	NA	4	5	20	5
Nozawa1999[299]	rabbit	NR	NR	none	local	NA	1	2	2	5
Nozawa2003_ip20[300]	rat	NR	m	none	local	NA	2	5	10	20
Nozawa2003_ip5[300]	rat	NR	m	none	local	NA	2	5	10	5
Okamura1999[301]	rat	NR	m	none	local	NA	3	3	9	3
Okubo2000[302]	rabbit	NR	m	none	local	NA	4	5	20	1440
Okubo2004a[303]	rabbit	NR	m	none	local	NA	4	5	20	10
Okubo2004b_ip10[304]	rabbit	NR	m	none	local	NA	4	5	20	10
Okubo2004b_ip24h[304]	rabbit	NR	m	none	local	NA	4	5	20	1440
Ovize1992_60is[305]	dog	yes	m/f	none	local	NA	4	3	12	5
Ovize1992_90is[305]	dog	yes	m/f	none	local	NA	4	3	12	5
Ovize1995_05ip[306]	pig	NR	m/f	none	local	NA	1	5	5	10
Ovize1995_10ip[306]	pig	NR	m/f	none	local	NA	1	10	10	10
Pagel2007[307]	rabbit	NR	m	none	local	NA	3	5	15	5
Patel2001[308]	rat	NR	m	none	local	NA	1	5	5	5
Patel2002_1cy[309]	rat	NR	m	none	local	NA	1	15	15	5
Patel2002_3cy[309]	rat	NR	m	none	local	NA	3	5	15	5
Patel2005[310]	rat	NR	m	none	local	NA	3	5	15	1440
Peart2003[311]	dog	NR	NR	none	local	NA	1	5	5	10
Pell1998[312]	rabbit	yes	m	none	remote	RAO	1	10	10	10
Perricone2013[313]	mouse	NR	m	none	local	NA	3	5	15	5
Petrischev2006_IPC[314]	rat	NR	NR	none	local	NA	4	3	12	6
Petrischev2006_RIPC[314]	rat	NR	NR	none	remote	MAO	1	20	20	15
Ping1999[315]	rabbit	NR	NR	none	local	NA	6	4	24	1440
Ping2002[316]	mouse	NR	NR	none	local	NA	6	4	24	1440
Piot1997[317]	rat	NR	f	none	local	NA	5	5	25	5
Poulsen2014[318]	pig	NR	f	none	local	NA	2	10	20	30

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Przyklenk1993[319]	dog	yes	NR	none	remote	LCX	4	5	20	5
Przyklenk1995[320]	dog	NR	NR	none	local	NA	4	5	20	5
Przyklenk1996[321]	dog	NR	NR	none	local	NA	4	5	20	5
Przyklenk1997[322]	dog	NR	NR	none	local	NA	1	10	10	30
Przyklenk2001_adult[323]	rabbit	NR	NR	none	local	NA	1	5	5	10
Przyklenk2001_middle[323]	rabbit	NR	NR	middle-age	local	NA	1	5	5	10
Przyklenk2001_old[323]	rabbit	NR	NR	senescence	local	NA	1	5	5	10
Przyklenk2003_adult[324]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Przyklenk2003_old[324]	rabbit	NR	m/f	senescence	local	NA	1	5	5	10
Qian1996[325]	rat	NR	NR	none	local	NA	1	5	5	5
Qian1999_1cy[326]	rat	NR	m	none	local	NA	1	5	5	10
Qian1999_1cy24h[326]	rat	NR	m	none	local	NA	1	5	5	1440
Qian1999_2cy24h[326]	rat	NR	m	none	local	NA	2	5	10	1440
Qian1999_3cy[326]	rat	NR	m	none	local	NA	3	5	15	10
Qian1999_3cy24h[326]	rat	NR	m	none	local	NA	3	5	15	1440
Qian1999_3cy48h[326]	rat	NR	m	none	local	NA	3	5	15	2880
Qiu1997a[327]	rabbit	NR	m	none	local	NA	6	4	24	1440
Qiu1997b_25cy[328]	pig	NR	m/f	none	local	NA	25	2	50	1440
Qiu1997b_ip24h[328]	pig	NR	m/f	none	local	NA	10	2	20	1440
Qiu1997b_ip25[328]	pig	NR	m/f	none	local	NA	10	2	20	25
Rajesh2003_ip10[329]	rat	NR	m	cardiac hypertrophy	local	NA	4	3	12	10
Rajesh2003_ip24h[329]	rat	NR	m	cardiac hypertrophy	local	NA	4	3	12	1440
Rajesh2003_ip5h[329]	rat	NR	m	cardiac hypertrophy	local	NA	4	3	12	300
Rajesh2004_healthy[330]	rat	NR	m	none	local	NA	4	3	12	10
Rajesh2004_hypertr[330]	rat	NR	m	cardiac hypertrophy	local	NA	4	3	12	10
Raphael2005[331]	rabbit	NR	NR	none	local	NA	1	5	5	10
Redel2009_3cy[332]	mouse	NR	m	none	local	NA	3	5	15	40
Redel2009_6cy[332]	mouse	NR	m	none	local	NA	6	5	30	40
Reffelmann2003[333]	rabbit	NR	m	none	local	NA	1	5	5	10
Ren2004[334]	mouse	NR	m/f	none	local	NA	6	4	24	1440
Richard1993[335]	rat	NR	m	none	local	NA	3	5	15	5

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Richard1994[336]	rat	NR	m	none	local	NA	3	5	15	5
Rioufol1997[337]	pig	NR	NR	none	local	NA	1	10	10	10
Rivo2006[338]	rabbit	NR	NR	none	local	NA	1	5	5	10
Roesner2007[339]	pig	yes	m	none	local	NA	1	10	10	15
Roesner2010[340]	pig	yes	m	none	local	NA	1	10	10	15
Rohmann1994[341]	pig	NR	m/f	none	local	NA	1	10	10	15
Sack1993_ip30[342]	pig	NR	m	none	local	NA	2	10	20	30
Sack1993_ip4dip[342]	pig	NR	m	none	local	NA	4	10	40	30
Sack1993_ip60[342]	pig	NR	m	none	local	NA	2	10	20	60
Sack1993_ip60ip[342]	pig	NR	m	none	local	NA	4	10	40	30
Sanada2001a_exp1[343]	dog	NR	NR	none	local	NA	4	5	20	5
Sanada2001a_exp2[343]	dog	NR	NR	none	local	NA	4	5	20	5
Sanada2001b[344]	dog	NR	NR	none	local	NA	4	5	20	5
Sanada2004[345]	dog	NR	NR	none	local	NA	1	5	5	25
Sandhu1997_3cy[346]	rabbit	NR	m/f	none	local	NA	3	5	15	10
Sandhu1997_lstab[346]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Sandhu1997_sstab[346]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Sanz1995[347]	pig	NR	NR	none	local	NA	2	5	10	5
Sarkar2012[348]	mouse	NR	NR	none	local	NA	2	5	10	5
Sasamori2006[349]	dog	NR	m/f	none	local	NA	4	5	20	5
Sato2007_45is[350]	rat	NR	m	none	local	NA	12	2	24	1440
Sato2007_60is[350]	rat	NR	m	none	local	NA	12	2	24	1440
Sbarouni2006_healthy[351]	rabbit	NR	f	none	local	NA	2	5	10	10
Sbarouni2006_ovx[351]	rabbit	NR	f	ovariectomy	local	NA	2	5	10	10
Schmidt2014[352]	pig	NR	m/f	none	remote	hind limb	4	5	20	5
Schoemaker2000_IPC[353]	rat	NR	m	none	local	NA	1	15	15	10
Schoemaker2000_RIPC[353]	rat	NR	m	none	remote	MAO	1	15	15	10
Schott1990[354]	pig	NR	m	none	local	NA	1	10	10	30
Schultz1995[355]	rat	NR	m	none	local	NA	3	5	15	5
Schultz1996[356]	rat	NR	m	none	local	NA	3	5	15	5
Schultz1997a[357]	rat	NR	NR	none	local	NA	1	5	5	10

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Schultz1997b[358]	rat	NR	m	none	local	NA	3	5	15	5
Schultz1997c[359]	rat	NR	m	none	local	NA	3	5	15	5
Schultz1997d[360]	rat	NR	m	none	local	NA	3	5	15	5
Schultz1998a_1cy[361]	rat	NR	m	none	local	NA	1	5	5	20
Schultz1998a_3cy[361]	rat	NR	m	none	local	NA	3	5	15	5
Schultz1998b_exp1[362]	rat	NR	m	none	local	NA	3	5	15	5
Schultz1998b_exp2[362]	rat	NR	m	none	local	NA	3	5	15	5
Schultz1998c[363]	rat	NR	m	none	local	NA	3	5	15	5
Schulz1994[364]	pig	NR	m/f	none	local	NA	1	10	10	15
Schwartz1997[365]	dog	none	m/f	none	local	NA	1	5	5	10
Schwartz2001_2cy[366]	dog	NR	m/f	none	local	NA	2	10	20	10
Schwartz2001_ip10[366]	dog	NR	m/f	none	local	NA	1	10	10	10
Schwartz2001_ip2h[366]	dog	NR	m/f	none	local	NA	1	10	10	120
Schwartz2001_ip3h[366]	dog	NR	m/f	none	local	NA	1	10	10	180
Schwartz2001_ip5h[366]	dog	NR	m/f	none	local	NA	1	10	10	300
Schwartz2002[367]	pig	NR	m/f	none	local	NA	2	5	10	10
Schwarz1997[368]	pig	NR	m	none	local	NA	2	10	20	30
Schwarz1998_ip24h[369]	pig	NR	m	none	local	NA	2	10	20	1440
Schwarz1998_ip30[369]	pig	NR	m	none	local	NA	2	10	20	30
Schwarz1998_ip5h[369]	pig	NR	m	none	local	NA	2	10	20	300
Schwarz1998_ip60[369]	pig	NR	m	none	local	NA	2	10	20	60
Schwarz1998_ip90[369]	pig	NR	m	none	local	NA	2	10	20	90
Sebbag1996[370]	dog	yes	m/f	none	local	NA	4	5	20	5
Shahid2008[371]	rat	NR	m	none	remote	hind limb	1	15	15	10
Shattock1996[372]	pig	NR	m	none	local	NA	2	8	16	8
Shekarforoush2011[373]	rat	NR	m	none	local	NA	1	5	5	NR
Sheldrick1999[374]	rabbit	NR	m	none	local	NA	1	5	5	10
Shen2008[375]	pig	NR	f	none	local	NA	2	10	20	1440
Shen2013[376]	rat	NR	m	none	local	NA	3	7	21	10
Shinmura2000[377]	rabbit	NR	m	none	local	NA	6	4	24	1440
Shinmura2002[378]	rabbit	NR	m	none	local	NA	6	4	24	1440

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Shintani2004[379]	dog	NR	NR	none	local	NA	4	5	20	5
Singh2000[380]	rat	NR	m/f	none	local	NA	4	5	20	1440
Singh2004[381]	rat	NR	m/f	none	remote	RAO	4	5	20	10
Sivarajah2005[382]	rat	NR	m	none	local	NA	2	5	10	5
Sivarajah2006[383]	rat	NR	m	none	local	NA	2	5	10	5
Smits1998[384]	pig	NR	m/f	none	local	NA	2	5	10	10
Smul2011[385]	rabbit	NR	m	none	local	NA	1	5	5	30
Speechly-Dick1994a[386]	rat	NR	m	none	local	NA	1	5	5	10
Speechly-Dick1994b_healthy[387]	rat	NR	m	none	local	NA	1	5	5	10
Speechly-Dick1994b_hypert[387]	rat	NR	m	hypertension	local	NA	1	5	5	10
Strohm2000[388]	pig	NR	m	none	local	NA	2	10	20	10
Su2006[389]	rat	NR	m	none	local	NA	2	5	10	5
Suzuki1998_2ip[390]	rabbit	NR	m	none	local	NA	1	2	2	5
Suzuki1998_3ip[390]	rabbit	NR	m	none	local	NA	1	3	3	5
Takano1998a[391]	rabbit	NR	m	none	local	NA	6	4	24	1440
Takano1998b[392]	rabbit	NR	m	none	local	NA	6	4	24	1440
Takano2000a[393]	rabbit	NR	m	none	local	NA	6	4	24	1440
Takano2000b[394]	rabbit	NR	m	none	local	NA	6	4	24	1440
Takaoka1999_IPC[395]	rabbit	NR	m	none	local	NA	1	5	5	20
Takaoka1999_RIPC[395]	rabbit	NR	m	none	remote	RAO	1	10	10	20
Takasaki1998[396]	rat	NR	m	none	local	NA	3	5	15	5
Talukder2010_f30is[397]	mouse	NR	f	none	local	NA	3	5	15	5
Talukder2010_f60is[397]	mouse	NR	f	none	local	NA	3	5	15	5
Talukder2010_m30is[397]	mouse	NR	m	none	local	NA	3	5	15	5
Talukder2010_m60is[397]	mouse	NR	m	none	local	NA	3	5	15	5
Tanaka1994a_4cy24h[398]	rabbit	NR	m	none	local	NA	4	5	20	1440
Tanaka1994a_4cy48h[398]	rabbit	NR	m	none	local	NA	4	5	20	2880
Tanaka1994a_ip24h[398]	rabbit	NR	m	none	local	NA	1	5	5	1440
Tanaka1994a_ip2h[398]	rabbit	NR	m	none	local	NA	1	5	5	120
Tanaka1994a_ip5[398]	rabbit	NR	m	none	local	NA	1	5	5	5
Tanaka1994b[399]	rabbit	NR	m	none	local	NA	1	5	5	5

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Tang2004[400]	rabbit	NR	m	none	local	NA	6	4	24	1440
Tang2005_exp1[401]	rabbit	NR	m	none	local	NA	6	4	24	1440
Tang2005_exp2[401]	rabbit	NR	m	none	local	NA	6	4	24	1440
Tang2005_hyperchol[401]	rabbit	NR	m	hypercholesterolemia	local	NA	6	4	24	1440
Tang2006_ip2_30is[402]	rat	NR	m	none	local	NA	12	2	24	2
Tang2006_ip2_45is[402]	rat	NR	m	none	local	NA	12	2	24	2
Tang2006_ip2_60is[402]	rat	NR	m	none	local	NA	12	2	24	2
Tang2006_ip24h_30is[402]	rat	NR	m	none	local	NA	12	2	24	1440
Tang2006_ip24h_45is[402]	rat	NR	m	none	local	NA	12	2	24	1440
Tang2006_ip24h_60is[402]	rat	NR	m	none	local	NA	12	2	24	1440
Tanhehco2000[403]	rabbit	NR	m	none	local	NA	2	5	10	10
Tanno2000_1cy[404]	rat	NR	m	none	local	NA	1	5	5	5
Tanno2000_2cyexp1[404]	rat	NR	m	none	local	NA	2	5	10	5
Tanno2000_2cyexp2[404]	rat	NR	m	none	local	NA	2	5	10	5
Tanno2000_2cyexp3[404]	rat	NR	m	none	local	NA	2	5	10	5
Tanno2000_2cyexp4[404]	rat	NR	m	none	local	NA	2	5	10	5
Thornton1990[405]	rabbit	NR	m/f	none	local	NA	2	5	10	10
Thornton1992[406]	rabbit	NR	m/f	none	local	NA	2	5	10	10
Thornton1993a[407]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Thornton1993b[408]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Thornton1993c[409]	rabbit	NR	m/f	none	local	NA	2	5	10	10
Tissier2001[410]	rabbit	NR	m	none	local	NA	6	4	24	1440
Tissier2002_3drep[411]	rabbit	NR	m	none	local	NA	6	4	24	1440
Tissier2002_3drep_hist[411]	rabbit	NR	m	none	local	NA	6	4	24	1440
Tissier2002_3hrep[411]	rabbit	NR	m	none	local	NA	6	4	24	1440
Toller1999[412]	dog	NR	m/f	none	local	NA	1	2	2	60
Toombs1993a[413]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Toufektsian2003[414]	rat	NR	m	none	local	NA	1	5	5	5
Toyoda2000_30is[415]	sheep	NR	m/f	none	local	NA	1	5	5	5
Toyoda2000_45is[415]	sheep	NR	m/f	none	local	NA	1	5	5	5
Toyoda2000_60is[415]	sheep	NR	m/f	none	local	NA	1	5	5	5

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Tranter2010[416]	mouse	NR	m/f	none	local	NA	6	4	24	1440
Tsovolas2008[417]	rabbit	NR	m	none	local	NA	2	5	10	10
Tsuchida1992[418]	rabbit	NR	m	none	local	NA	1	5	5	5
Tsuchida1994a[419]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Tsuchida1994b[420]	rabbit	NR	m/f	none	local	NA	1	5	5	120
Tsuchida1998_20is[421]	rat	NR	m	none	local	NA	2	5	10	5
Tsuchida1998_30is[421]	rat	NR	m	none	local	NA	2	5	10	5
Tsuchida1998_40is[421]	rat	NR	m	none	local	NA	2	5	10	5
Turan2008[422]	rat	NR	m	none	local	NA	1	5	5	10
Ueda1999_healthy[423]	rabbit	NR	NR	none	local	NA	1	5	5	10
Ueda1999_hyperchol[423]	rabbit	NR	NR	hypercholesterolemia	local	NA	1	5	5	10
Uematsu1998[424]	sheep	NR	m/f	none	local	NA	1	5	5	5
Valtchanova2004_ip24h[425]	rat	NR	m	none	local	NA	3	5	15	1440
Valtchanova2004_ip5[425]	rat	NR	m	none	local	NA	3	5	15	5
Valtchanova-Matchouganska2003[426]	rat	NR	m	none	local	NA	3	5	15	5
VandenDoel1998_030is[427]	rat	NR	m	none	local	NA	1	15	15	10
VandenDoel1998_045is[427]	rat	NR	m	none	local	NA	1	15	15	10
VandenDoel1998_060is[427]	rat	NR	m	none	local	NA	1	15	15	10
VandenDoel1998_120is[427]	rat	NR	m	none	local	NA	1	15	15	10
VanderHeide1994[428]	dog	yes	m/f	none	local	NA	4	5	20	5
VanWinkle1994b[429]	pig	yes	NR	none	local	NA	2	10	20	10
VanWylen1994[430]	dog	yes	m/f	none	local	NA	2	5	10	10
Vetterlein2006[431]	rat	NR	m	none	local	NA	3	5	15	10
Vincent2012[432]	mouse	NR	m	none	local	NA	3	1	3	10
Virag2013[433]	mouse	NR	f	none	local	NA	3	5	15	5
Vladic2011_mouse[434]	mouse	NR	m	hyperglycaemia	local	NA	4	5	20	5
Vladic2011_rbhealthy[434]	rabbit	NR	m	hyperglycaemia	local	NA	1	5	5	15
Vladic2011_rbhypergly[434]	rabbit	NR	m	hyperglycaemia	local	NA	1	5	5	15
Vogt1998_ip30[435]	pig	NR	m	none	local	NA	2	10	20	30
Vogt1998_ip60[435]	pig	NR	m	none	local	NA	2	10	20	60
Vogt1998_ip60ip[435]	pig	NR	m	none	local	NA	4	10	40	30

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Vogt2001_1cy[436]	pig	NR	m	none	local	NA	1	10	10	30
Vogt2001_2cy[436]	pig	NR	m	none	local	NA	2	10	20	30
Wall1994[437]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Walsh1994[438]	rabbit	NR	NR	none	local	NA	1	5	5	10
Wang2001[439]	rat	NR	m	none	remote	MAO	1	30	30	1440
Wang2002[440]	rat	NR	m	none	remote	MAO	1	25	25	15
Wang2009[441]	rat	NR	m	none	remote	hind limb	3	5	15	5
WangS2004[442]	sheep	NR	m	none	local	NA	3	5	15	10
WangY2004_ip24h[443]	rabbit	NR	m	none	local	NA	6	4	24	1440
WangY2004_ip72h[443]	rabbit	NR	m	none	local	NA	6	4	24	4320
Watanabe2006[444]	rat	NR	m	coronary stenosis	local	NA	2	5	10	5
Weber2005[445]	rat	NR	m	none	local	NA	3	5	15	5
Weber2008[446]	rat	NR	m	none	local	NA	1	5	5	1440
Weinbrenner2002_IPC[447]	rat	NR	m	none	local	NA	3	5	15	5
Weinbrenner2002_RIPC05[447]	rat	NR	m	none	remote	IAO	1	5	5	10
Weinbrenner2002_RIPC10[447]	rat	NR	m	none	remote	IAO	1	10	10	10
Weinbrenner2002_RIPC15[447]	rat	NR	m	none	remote	IAO	1	15	15	10
Weinbrenner2004_1cy[448]	rat	NR	m	none	local	NA	1	5	5	5
Weinbrenner2004_3cy[448]	rat	NR	m	none	local	NA	3	5	15	5
Weinbrenner2004_RIPC[448]	rat	NR	m	none	remote	IAO	1	15	15	10
Wolfe1993_ip30[449]	rat	NR	m	none	local	NA	4	5	20	30
Wolfe1993_ip360[449]	rat	NR	m	none	local	NA	4	5	20	360
Wolfe1993_ip5[449]	rat	NR	m	none	local	NA	4	5	20	5
Wolfe1993_ip60[449]	rat	NR	m	none	local	NA	4	5	20	60
Wolfrum2002[450]	rat	NR	m	none	remote	MAO	1	15	15	15
Wolfrum2005[451]	rat	NR	m	none	remote	MAO	1	15	15	15
Wong2010[452]	rat	NR	m	none	local	NA	3	5	15	5
Wong2012_IPC1[453]	rat	NR	m	none	local	NA	3	5	15	5
Wong2012_IPC2[453]	rat	NR	m	none	local	NA	3	5	15	5
Wong2012_RIPC1[453]	rat	NR	m	none	remote	hind limb	3	5	15	5
Wong2012_RIPC2[453]	rat	NR	m	none	remote	hind limb	3	5	15	5

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Wu2001[454]	rabbit	NR	m	none	local	NA	1	5	5	5
Wu2008a[455]	rat	NR	m	diabetes	local	NA	3	5	15	5
Wu2008b_IPC[456]	rat	NR	m	none	local	NA	3	5	15	5
Wu2008b_RIPC[456]	rat	NR	m	none	remote	hind limb	9	5	45	1440
Wu2009[457]	rat	NR	m	diabetes	local	NA	3	5	15	5
Wu2011_IPC[458]	rat	NR	m	none	local	NA	3	5	15	5
Wu2011_RIPC[458]	rat	NR	m	none	remote	hind limb	9	5	45	1440
Wu2013[459]	rabbit	NR	NR	none	local	NA	2	10	20	10
Xiang2011_early[460]	mouse	NR	m	none	local	NA	3	4	12	4
Xiang2011_late24hR[460]	mouse	NR	m	none	local	NA	3	4	12	1440
Xiang2011_late40R[460]	mouse	NR	m	none	local	NA	3	4	12	1440
Xiao2001_ip24h[461]	rat	NR	m	none	local	NA	6	4	24	1440
Xiao2001_ip48h[461]	rat	NR	m	none	local	NA	6	4	24	2880
Xiao2001_ip72h[461]	rat	NR	m	none	local	NA	6	4	24	4320
Xiong2011[462]	rat	NR	m	none	local	NA	3	5	15	5
Xu2001[463]	rabbit	NR	m/f	none	local	NA	3	5	15	20
Xu2002[464]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Xu2006[465]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Xu2010[466]	rat	NR	m	none	local	NA	3	5	15	1440
Xu2013[467]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Xuan2007[468]	mouse	NR	NR	none	local	NA	6	4	24	4
Yada2006[469]	dog	yes	m/f	none	local	NA	4	5	20	5
Yamada2002_2ip[470]	rabbit	NR	m	none	local	NA	1	2	2	10
Yamada2002_5ip[470]	rabbit	NR	m	none	local	NA	1	5	5	10
Yamasaki1997_05ip[471]	rabbit	NR	m	none	local	NA	1	5	5	5
Yamasaki1997_10ip[471]	rabbit	NR	m	none	local	NA	1	10	10	5
Yamasaki1997_15ip[471]	rabbit	NR	m	none	local	NA	1	15	15	5
Yamasaki2000_45is[472]	rabbit	NR	m	none	local	NA	1	5	5	5
Yamasaki2000_50is[472]	rabbit	NR	m	none	local	NA	1	5	5	5
Yamasaki2000_ip005[472]	rabbit	NR	m	none	local	NA	1	5	5	5
Yamasaki2000_ip040[472]	rabbit	NR	m	none	local	NA	1	5	5	40

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
Yamasaki2000_ip120[472]	rabbit	NR	m	none	local	NA	1	5	5	120
Yamashita1998_ip10[473]	rat	NR	m	none	local	NA	4	3	12	10
Yamashita1998_ip24h[473]	rat	NR	m	none	local	NA	4	3	12	1440
Yamashita1998_ip3h[473]	rat	NR	m	none	local	NA	4	3	12	180
Yamashita2000[474]	rat	NR	m	none	local	NA	4	3	12	1440
Yang1993_1cy[475]	rabbit	NR	m/f	none	local	NA	1	5	5	120
Yang1993_2cy[475]	rabbit	NR	m/f	none	local	NA	2	5	10	10
Yang1996[476]	rabbit	none	NR	none	local	NA	4	5	20	1440
Yang2006[477]	pig	NR	NR	none	local	NA	3	10	30	5
Yang2010[478]	macaque	NR	m	none	local	NA	2	10	20	10
Yang2011[479]	rat	NR	m	none	local	NA	4	3	12	5
YangX2013[480]	rat	NR	m	none	local	NA	3	5	15	5
YangZ2013[481]	mouse	NR	NR	none	local	NA	2	5	10	5
Yao1993a[482]	dog	NR	m/f	none	local	NA	1	10	10	10
Yao1993b[483]	dog	NR	m/f	none	local	NA	1	10	10	10
Yao1994a_ip10[484]	dog	NR	m/f	none	local	NA	1	10	10	10
Yao1994a_ip60[484]	dog	NR	m/f	none	local	NA	1	10	10	60
Yao1994b_10ip[485]	dog	NR	m/f	none	local	NA	1	10	10	10
Yao1994b_3ip[485]	dog	NR	m/f	none	local	NA	1	3	3	10
Yao1997[486]	dog	NR	m/f	none	local	NA	1	10	10	60
Yellon1992[487]	rat	NR	m	none	local	NA	1	5	5	10
Yorozuya2004_1cy[488]	rabbit	NR	m	none	local	NA	1	5	5	5
Yorozuya2004_4cy[488]	rabbit	NR	m	none	local	NA	4	5	20	5
Ytrehus1994[489]	rabbit	NR	m/f	none	local	NA	1	5	5	10
Yu2007[490]	rat	NR	m	none	local	NA	3	5	15	1440
Yu2010[491]	rat	NR	NR	none	local	NA	12	5	60	NR
Yu2011[492]	rat	NR	m	none	local	NA	2	5	10	5
Zacharowski2007[493]	rat	none	m	none	local	NA	3	2	6	10
Zhang2004[494]	rat	NR	m	none	local	NA	3	5	15	5
Zhang2010[495]	rat	NR	f	none	local	NA	2	5	10	5
ZhangS2006[496]	rat	NR	m	none	local	NA	3	5	15	5

comparison	species	opioids pre-IPC	sex (m/f)	condition / comorbidity	site of IPC	remote organ	IPC # ischemic cycli	IPC ischemic cycle (min)	IPC total ischemia (min)	IPC to IRI delay (min)
ZhangX2006[497]	rabbit	NR	m/f	none	local	NA	3	5	15	5
Zhao2003[498]	dog	yes	m/f	none	local	NA	1	5	5	10
Zhao2012_ip24h[499]	rat	NR	m	none	local	NA	3	5	15	1440
Zhao2012_ip5[499]	rat	NR	m	none	local	NA	3	5	15	5
Zhu2007[500]	mouse	NR	m	none	local	NA	3	5	15	15
Zhu2009_IPC[501]	rat	NR	NR	diabetes	local	NA	3	5	15	5
Zhu2009_RIPC[501]	rat	NR	NR	diabetes	remote	hind limb	9	5	45	5
Zhu2011_IPC[502]	rat	NR	m	diabetes	local	NA	3	5	15	5
Zhu2011_RIPC[502]	rat	NR	m	diabetes	remote	hind limb	9	5	45	5
Zhu2013[503]	rat	NR	m	none	remote	hind limb	3	5	15	5

Meta-analysis includes data from 785 independent comparisons identified from 503 studies. Multiple comparisons from a single study are indicated by an underscore followed by a comparison code. IPC = ischemic preconditioning, m = male, f = female, IRI = ischemia-reperfusion injury, NR = not reported, NA = not applicable, IAO = infrarenal aorta occlusion, RAO = renal artery occlusion, MAO = mesenteric artery occlusion, LCX = left circumflex coronary artery occlusion.

Supplemental Table B - study quality and risk of bias - page 1 of 12

study	reporting - randomization	reporting - blinding	reporting - powercalculation	bias - random group allocation	bias - groups similar at baseline	bias - blinded group allocation	bias - random housing	bias - blind intervention	bias - random outcome assessment	bias - blind outcome assessment	bias - reporting of drop-outs	bias - other
Alcindor2004[1]	Y	N	N	?	?	?	?	?	?	?	L	L
Alizadeh2011[2]	N	N	N	?	L	?	?	?	?	?	H	L
Alkhulaifi1993[3]	Y	N	N	?	?	?	?	?	?	?	?	L
Amour2009[4]	Y	N	N	?	L	?	?	?	?	?	H	H
Andreadou2004[5]	Y	N	N	?	?	?	?	?	?	?	L	L
Andreadou2006[6]	Y	N	N	?	?	?	?	?	?	?	L	L
Andreadou2011[7]	Y	N	N	?	?	?	?	?	?	?	?	L
Aouam2005[8]	Y	N	N	?	L	?	?	?	?	?	H	H
Argaud2004[9]	Y	N	N	?	L	?	?	?	?	?	?	L
Argaud2005a[10]	Y	N	N	?	L	?	?	?	?	?	?	L
Argaud2005b[11]	Y	Y	N	?	L	?	?	?	?	?	L	L
Argaud2005c[12]	N	N	N	?	L	?	?	?	?	?	L	L
Argaud2008[13]	N	N	N	?	?	?	?	?	?	?	?	L
Auchampach1992[14]	N	N	N	?	?	?	?	?	?	?	?	L
Auchampach1993[15]	Y	N	N	?	?	?	?	?	?	?	L	L
Auchampach2004[16]	Y	N	N	?	?	?	?	?	?	?	H	L
Aye1999[17]	N	N	N	?	L	?	?	?	?	?	?	L
Baines1997[18]	N	N	N	?	?	?	?	?	?	?	?	L
Baines1999[19]	N	N	N	?	?	?	?	?	?	?	?	L
Barbosa1996[20]	Y	N	N	?	L	?	?	?	?	?	?	L
Basalay2012[21]	N	N	N	?	L	?	?	?	?	?	H	L
Baumert2007[22]	Y	Y	Y	?	?	?	?	?	?	L	L	L
Baxter1994[23]	Y	N	N	?	?	?	?	?	?	?	L	L
Baxter1995[24]	N	N	N	?	?	?	?	?	?	?	L	L
Baxter1997[25]	Y	Y	N	?	?	?	?	?	?	?	?	L
Belosjorow1999[26]	N	N	N	?	?	?	?	?	?	?	L	L
Belosjorow2003[27]	N	N	N	?	?	?	?	?	?	?	L	L
Bencsik2010[28]	N	N	N	?	?	?	?	?	?	?	?	L
Bernardo1999[29]	Y	N	N	?	H	?	?	?	?	?	?	L
Bibli2013[30]	Y	N	N	?	L	?	?	?	?	?	L	L
Blokhin2008a[31]	N	N	N	?	?	?	?	?	?	?	L	L
Blokhin2008b[32]	N	N	N	?	?	?	?	?	?	?	H	L
Boengler2007[33]	N	N	N	?	H	?	?	?	?	?	H	L
Brandenburger2012[34]	Y	N	N	?	?	?	?	?	?	?	?	L
Bukhari1995[35]	Y	N	N	?	?	?	?	?	?	?	?	L
Burckhartt1995[36]	Y	N	N	?	?	?	?	?	?	?	L	L
Burns1996[37]	N	N	N	?	?	?	?	?	?	?	L	L
Cai2008[38]	N	N	N	?	L	?	?	?	?	?	?	L
Cai2013[39]	N	N	N	?	?	?	?	?	?	?	?	L
Canyon2005[40]	Y	N	N	?	?	?	?	?	?	?	H	L
Cason1997[41]	Y	N	N	L	?	?	?	?	?	?	L	L
Chazov2001[42]	N	N	N	?	?	?	?	?	?	?	?	L
Chen1997[43]	N	N	N	?	?	?	?	?	?	?	?	L
Chen2005[44]	Y	Y	N	?	?	?	?	?	?	L	L	L
Chen2008[45]	Y	N	N	?	L	?	?	?	?	?	?	L

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Cheng2009[46]	Y	N	N	?	?	?	?	?	?	?	?	L
Cheng2010a[47]	N	N	N	?	?	?	?	?	?	?	?	L
Cheng2010b[48]	N	N	N	?	?	?	?	?	?	?	?	L
Chiari2002[49]	N	N	N	?	?	?	?	?	?	?	L	L
Chien1996[50]	Y	N	N	?	L	?	?	?	?	?	L	L
Chien1999[51]	Y	N	N	?	L	?	?	?	?	?	H	L
Cohen1991[52]	Y	N	N	?	?	?	?	?	?	?	L	L
Cohen1994[53]	Y	N	N	H	?	?	?	?	?	?	L	L
Cohen1999[54]	Y	N	N	?	?	?	?	?	?	?	L	L
Cohen2000[55]	Y	Y	N	?	?	?	?	?	?	?	L	L
Colantonio2004[56]	Y	Y	N	?	?	?	?	?	?	?	?	L
Dai2003[57]	Y	N	N	?	L	?	?	?	?	?	L	L
Dai2009[58]	Y	N	N	?	L	?	?	?	?	?	L	L
Dairaku2002[59]	N	N	N	?	?	?	?	?	?	?	?	L
Daleau2001[60]	N	N	N	?	L	?	?	?	?	?	?	L
Das2006[61]	N	N	N	?	L	?	?	?	?	?	?	L
Das2007[62]	N	N	N	?	L	?	?	?	?	?	?	L
Das2012[63]	Y	Y	N	?	L	?	?	?	?	L	L	L
Dawn2002[64]	N	N	N	?	?	?	?	?	?	?	L	L
Dawn2004a[65]	N	N	N	?	?	?	?	?	?	?	L	L
Dawn2004b[66]	N	N	N	?	?	?	?	?	?	?	H	L
Demiryurek2005a[67]	N	N	N	?	L	?	?	?	?	?	L	L
Demiryurek2005b[68]	N	N	N	?	L	?	?	?	?	?	?	L
DePaulis2013[69]	Y	N	N	?	L	?	?	?	?	?	?	L
Depre2010[70]	N	N	N	?	?	?	?	?	?	?	L	L
Deuchar2007[71]	N	N	N	?	?	?	?	?	?	?	?	L
DeZeeuw2001[72]	N	N	N	?	?	?	?	?	?	?	L	L
Ding2000[73]	N	N	N	?	?	?	?	?	?	?	L	L
Ding2001[74]	N	N	N	?	L	?	?	?	?	?	?	L
Dong2004[75]	N	N	N	?	?	?	?	?	?	?	?	L
Ebel2003[76]	Y	N	N	?	L	?	?	?	?	?	?	L
Ebel2009[77]	Y	N	N	?	L	?	?	?	?	?	?	L
Eckle2006[78]	N	N	N	?	?	?	?	?	?	?	?	L
Eckle2012[79]	N	N	N	?	?	?	?	?	?	?	?	L
Erikson1996[80]	Y	N	N	?	H	?	?	?	?	?	L	L
Fang2008[81]	Y	Y	N	?	?	?	?	?	?	?	?	L
Farhat2001[82]	Y	N	N	?	?	?	?	?	?	?	?	L
Fisher2002[83]	N	N	N	?	?	?	?	?	?	?	?	L
Flack3rd1991[84]	N	N	N	?	?	?	?	?	?	?	?	L
Flaherty2008[85]	N	N	N	?	L	?	?	?	?	?	H	L
Flynn2005[86]	Y	Y	N	?	?	?	?	?	?	?	?	L
Fryer1998[87]	Y	N	N	?	L	?	?	?	?	?	?	L
Fryer1999[88]	Y	N	N	?	L	?	?	?	?	?	?	L
Fryer2000[89]	Y	N	N	?	?	?	?	?	?	?	?	L
Fryer2001a[90]	N	N	N	?	L	?	?	?	?	?	?	L

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Fryer2001b[91]	N	N	N	?	L	?	?	?	?	?	?	L
Fryer2001c[92]	N	N	N	?	L	?	?	?	?	?	?	L
Fryer2002[93]	Y	N	N	?	L	?	?	?	?	?	?	L
Fukuma2000[94]	N	N	N	?	L	?	?	?	?	?	?	L
Galagudza2007a[95]	N	N	N	?	L	?	?	?	?	?	L	L
Galagudza2007b[96]	N	N	N	?	?	?	?	?	?	?	L	L
Galagudza2009[97]	N	N	N	?	?	?	?	?	?	?	L	L
Gao2000[98]	N	Y	N	?	?	?	?	?	?	L	?	L
Gao2003[99]	Y	N	N	?	?	?	?	?	?	?	?	L
Gao2012[100]	Y	N	N	?	?	?	?	?	?	?	L	L
Ge2011[101]	Y	N	N	?	?	?	?	?	?	?	?	L
Gerczuk2012[102]	Y	N	N	?	L	?	?	?	?	?	L	L
Gho1996[103]	N	N	N	?	?	?	?	?	?	?	L	L
Gomez2011[104]	Y	N	N	?	?	?	?	?	?	?	?	L
Gomoll1996[105]	N	N	N	?	L	?	?	?	?	?	?	L
Goto1993[106]	Y	N	N	?	L	?	?	?	?	?	L	L
Gourine2005[107]	Y	N	N	?	L	?	?	?	?	?	L	L
Gozal2005[108]	Y	N	N	L	?	?	?	?	?	?	?	L
Griol-Charhbili2005[109]	N	Y	N	?	L	?	?	?	?	?	?	L
Gross1992[110]	Y	N	N	?	?	?	?	?	?	?	L	L
Gross2009[111]	N	N	N	H	?	?	?	?	?	?	L	L
Grover1992[112]	N	N	N	?	?	?	?	?	?	?	?	L
Grover1996[113]	N	N	N	?	?	?	?	?	?	?	L	L
Grund1997[114]	Y	N	N	?	?	?	?	?	?	?	L	L
Gu2008[115]	Y	N	N	?	?	?	?	?	?	?	L	L
Gumina1999[116]	Y	N	N	?	?	?	?	?	?	?	L	L
Gumina2001[117]	Y	N	N	?	?	?	?	?	?	?	L	L
Gumina2005[118]	N	N	N	?	?	?	?	?	?	?	L	L
Guo1998[119]	N	N	N	?	L	?	?	?	?	?	?	L
Guo1999[120]	N	N	N	?	?	?	?	?	?	?	?	L
Guo2001[121]	N	N	N	?	L	?	?	?	?	?	?	L
Guo2007[122]	N	N	N	?	?	?	?	?	?	?	?	L
Guo2012[123]	N	N	N	?	L	?	?	?	?	?	L	L
Gysembergh1998[124]	N	N	N	?	?	?	?	?	?	?	?	L
Haessler1994[125]	Y	N	N	?	?	?	?	?	?	?	L	L
Haessler1997[126]	Y	N	N	?	?	?	?	?	?	?	L	L
Hale1992[127]	Y	N	N	?	L	?	?	?	?	?	H	L
Hale1999[128]	Y	N	N	?	L	?	?	?	?	?	H	H
Halkos2004[129]	Y	N	N	?	?	?	?	?	?	?	?	L
Hampton2003[130]	N	Y	N	?	?	?	?	?	?	?	L	L
Haruna1998[131]	Y	N	N	?	L	?	?	?	?	?	?	L
Hatori2001[132]	Y	Y	N	L	?	?	?	?	?	?	L	L
Hausenloy2012[133]	Y	N	N	?	?	?	?	?	?	?	?	L
He2009[134]	Y	N	N	?	?	?	?	?	?	?	L	L
Heinen2011[135]	Y	N	N	?	L	?	?	?	?	?	?	L

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HemetsbergerH2008[136]	N	N	N	?	?	?	?	?	?	?	?	L
HemetsbergerR2008[137]	N	N	N	?	?	?	?	?	?	?	?	L
Hiasa2001[138]	Y	N	N	?	L	?	?	?	?	?	?	L
Hibert2013[139]	N	N	N	?	?	?	?	?	?	?	?	L
Hide1996[140]	N	N	N	?	L	?	?	?	?	?	L	L
Hinokiyama2003[141]	Y	Y	N	L	?	?	?	?	?	?	L	L
Hiroi2010[142]	N	N	N	?	?	?	?	?	?	?	?	L
Hoshida1994[143]	N	N	N	?	?	?	?	?	?	?	H	L
Htun1998[144]	N	N	N	?	?	?	?	?	?	?	?	L
Hu2002[145]	Y	N	N	?	?	?	?	?	?	?	L	L
Huang1999[146]	N	N	N	?	?	?	?	?	?	?	L	L
Huang2004[147]	Y	N	N	?	?	?	?	?	?	?	L	L
Huang2011[148]	Y	N	N	?	?	?	?	?	?	?	L	L
Huang2013[149]	Y	N	N	?	?	?	?	?	?	?	L	H
Iliodromitis1994[150]	Y	N	N	?	?	?	?	?	?	?	L	L
Iliodromitis1996a[151]	N	N	N	?	?	?	?	?	?	?	?	L
Iliodromitis1996b[152]	N	N	N	?	?	?	?	?	?	?	?	L
Iliodromitis1997[153]	Y	N	N	?	L	?	?	?	?	?	L	L
Iliodromitis2002a[154]	N	N	N	?	L	?	?	?	?	?	?	L
Iliodromitis2002b[155]	N	N	N	?	L	?	?	?	?	?	L	L
Iliodromitis2003[156]	N	N	N	?	L	?	?	?	?	?	?	L
Iliodromitis2004[157]	N	N	N	?	L	?	?	?	?	?	?	L
Iliodromitis2006a[158]	N	N	N	?	L	?	?	?	?	?	?	L
Iliodromitis2006b[159]	N	N	N	?	L	?	?	?	?	?	?	L
Iliodromitis2008[160]	N	N	N	?	L	?	?	?	?	?	L	L
Iliodromitis2013[161]	Y	Y	N	?	?	?	?	?	?	L	?	L
Imagawa1997[162]	Y	N	N	?	?	?	?	?	?	?	L	L
Imagawa1998[163]	N	N	N	?	L	?	?	?	?	?	L	L
Imagawa1999[164]	Y	N	N	?	L	?	?	?	?	?	L	L
Ismaeil1999[165]	Y	N	N	L	?	?	?	?	?	?	L	L
Iwamoto1991[166]	N	N	N	?	L	?	?	?	?	?	L	L
Jaberansari2001[167]	Y	N	N	?	?	?	?	?	?	?	?	L
Jancso2004[168]	N	N	N	?	?	?	?	?	?	?	?	L
Jansco2005[169]	Y	N	N	?	?	?	?	?	?	?	L	L
Ji2013[170]	Y	Y	N	?	?	?	?	?	?	?	L	L
Jiao2002[171]	Y	N	N	?	L	?	?	?	?	?	?	L
Jung2000[172]	Y	Y	N	?	L	?	?	?	?	?	H	L
Junhua1997[173]	N	N	N	?	?	?	?	?	?	?	?	L
Kalakech2013[174]	N	Y	N	?	?	?	?	?	?	L	L	L
Kapadia1997[175]	N	N	N	?	?	?	?	?	?	?	H	H
Kara 2004[176]	N	N	N	?	L	?	?	?	?	?	?	L
Kara2006[177]	Y	N	N	?	L	?	?	?	?	?	L	L
Kariya1997[178]	Y	N	N	?	L	?	?	?	?	?	L	L
Katakam2007[179]	Y	N	N	?	?	?	?	?	?	?	?	L
Kersten1997[180]	Y	N	N	?	?	?	?	?	?	?	L	L

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Kersten1998[181]	Y	N	N	?	?	?	?	?	?	?	L	L
Kersten2000[182]	N	N	N	?	?	?	?	?	?	?	L	L
Kingma1999[183]	N	N	N	?	L	?	?	?	?	?	?	L
Kingma2011[184]	Y	N	Y	?	?	?	?	?	?	?	L	H
Kingma2013[185]	Y	N	Y	?	?	?	?	?	?	?	L	L
Kirsch2000[186]	Y	N	N	?	?	?	?	?	?	?	?	L
Kis2003[187]	N	N	N	?	L	?	?	?	?	?	?	L
Kitakaze1994a[188]	N	N	N	?	?	?	?	?	?	?	?	L
Kitakaze1994b[189]	N	Y	N	?	?	?	?	?	?	L	L	L
Kitakaze1996a[190]	N	Y	N	?	?	?	?	?	?	L	L	H
Kitakaze1996b[191]	Y	N	N	?	?	?	?	?	?	?	L	H
Kitakaze2000[192]	N	Y	N	?	?	?	?	?	?	L	L	L
Kocoglu2008[193]	Y	Y	N	L	L	?	?	?	?	L	?	L
Kohler2007[194]	N	N	N	?	?	?	?	?	?	?	?	L
Kojima1995[195]	N	N	N	?	?	?	?	?	?	?	?	H
Kolettis2013[196]	N	N	Y	?	?	?	?	?	?	?	L	L
Koneru2007[197]	Y	N	N	?	?	?	?	?	?	?	?	L
Koning1994a[198]	Y	N	N	?	?	?	?	?	?	?	?	L
Koning1994b[199]	N	N	N	?	?	?	?	?	?	?	?	L
Kositprapa2001[200]	Y	N	N	?	L	?	?	?	?	?	?	L
Kouchi1998[201]	Y	N	N	?	L	?	?	?	?	?	?	L
Kremastinos2000[202]	Y	N	N	?	L	?	?	?	?	?	L	L
Kristensen2004[203]	N	N	N	?	?	?	?	?	?	?	?	L
Kudej2006[204]	N	N	N	?	?	?	?	?	?	?	?	L
Kunuthur2012[205]	N	N	N	?	L	?	?	?	?	?	?	L
Kuzmin2000[206]	N	N	N	?	L	?	?	?	?	?	L	L
Kuzume2004[207]	Y	Y	N	?	?	?	?	?	?	L	L	L
Kuzuya1993[208]	N	N	N	?	?	?	?	?	?	?	L	L
Landim2013[209]	N	N	N	?	?	?	?	?	?	?	L	L
Lang2006[210]	Y	N	N	?	?	?	?	?	?	?	?	L
Lange2006[211]	Y	N	N	?	L	?	?	?	?	?	L	L
Lankford2006[212]	N	N	N	?	?	?	?	?	?	?	?	L
Larsen2007[213]	Y	Y	Y	L	L	?	?	?	?	L	?	H
Lasley1995[214]	N	N	N	?	?	?	?	?	?	?	?	L
Lazou2006[215]	Y	N	N	?	?	?	?	?	?	?	?	L
Lee2000[216]	N	Y	N	?	L	?	?	?	?	L	?	L
Lee2004[217]	N	N	N	?	?	?	?	?	?	?	L	L
Li_G1990[218]	Y	N	N	?	L	?	?	?	?	?	L	L
Li_Q2003[219]	N	N	N	?	L	?	?	?	?	?	L	L
Li_R2009[220]	N	N	N	H	L	H	H	H	H	H	?	L
Li_S2008[221]	N	N	N	?	?	?	?	?	?	?	?	L
Li_S2009[222]	N	N	N	?	?	?	?	?	?	?	?	L
Li_S2010[223]	Y	N	N	?	L	?	?	?	?	?	?	L
Li_W2003[224]	N	N	N	?	L	?	?	?	?	?	L	L
Li_X2012a[225]	N	N	N	?	?	?	?	?	?	?	?	L

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Li_X2012b[226]	Y	Y	N	?	?	?	?	?	?	?	L	L
Li_Y1992a[227]	Y	N	N	?	?	?	?	?	?	?	?	H
Li_Y1992b[228]	Y	Y	N	?	?	?	?	H	?	?	?	H
Li_Y1993a[229]	Y	Y	N	?	L	?	?	L	?	?	?	L
Li_Y1993b[230]	Y	Y	N	?	L	?	?	L	?	?	?	L
Li_Y1994[231]	Y	N	N	?	L	?	?	?	?	?	?	L
Li_Y1995[232]	Y	N	N	?	L	?	?	?	?	?	?	L
Li_Y2011[233]	N	N	N	?	?	?	?	?	?	?	?	L
Liao2013[234]	Y	N	N	L	?	?	?	?	?	?	H	L
Liaudet2001[235]	N	N	N	?	?	?	?	?	?	?	?	L
Lie2010[236]	Y	N	N	?	L	?	?	?	?	L	?	L
Liem2001[237]	N	N	N	?	L	?	?	?	?	?	L	L
Liem2005[238]	N	N	N	?	L	?	?	?	?	?	?	L
Lim2007[239]	N	N	N	?	?	?	?	?	?	?	?	L
Lim2010[240]	Y	N	N	?	L	?	?	?	?	?	?	L
Liu1993a[241]	Y	N	N	?	L	?	?	?	?	?	?	L
Liu1993b[242]	Y	N	N	?	L	?	?	?	?	?	L	L
Liu1994[243]	N	N	N	?	?	?	?	?	?	?	L	L
Liu2005[244]	Y	N	N	?	?	?	?	?	?	?	?	L
Liu2008[245]	N	N	N	?	?	?	?	?	?	?	L	L
LiuG1992a[246]	Y	N	N	?	?	?	?	?	?	?	?	H
LiuG1992b[247]	Y	N	N	?	?	?	?	?	?	?	?	L
LiuY1992[248]	Y	N	N	?	?	?	?	?	?	?	?	L
Loke1998[249]	Y	N	N	?	?	?	?	?	?	?	?	L
Lott1996[250]	Y	N	N	?	L	?	?	?	?	?	?	L
Lotz2011[251]	Y	N	N	?	L	?	?	?	?	?	?	H
Lou2003[252]	Y	N	N	?	?	?	?	?	?	?	?	L
Lu2009[253]	N	N	N	?	?	?	?	?	?	?	?	L
Lu2011[254]	Y	N	N	?	L	?	?	?	?	?	?	L
Lu2012[255]	Y	N	N	?	L	?	?	?	?	?	L	L
Luo2004[256]	Y	N	N	?	?	?	?	?	?	?	?	L
Manintveld2005[257]	N	N	N	?	L	?	?	?	?	?	?	L
Manintveld2011[258]	N	N	N	?	?	?	?	?	?	?	?	L
Marber1993[259]	N	N	N	H	?	?	?	?	?	?	H	H
Martin1997[260]	N	N	N	?	?	?	?	?	?	?	?	L
Matsuda1993[261]	N	N	N	?	?	?	?	?	?	?	H	L
Matsumura2000[262]	N	N	N	?	L	?	?	?	?	?	L	L
McVey1999a[263]	N	N	N	?	L	?	?	?	?	?	L	L
McVey1999b[264]	N	N	N	?	?	?	?	?	?	?	?	L
Mei1998[265]	Y	N	N	?	?	?	?	?	?	?	L	L
Miki1996[266]	Y	N	N	?	L	?	?	?	?	?	L	L
Miki1998a[267]	N	N	N	?	?	?	?	?	?	?	L	L
Miki1998b[268]	N	N	N	?	L	?	?	?	?	?	L	L
Miki1999[269]	N	N	N	?	?	?	?	?	?	?	L	H
Miller1999[270]	Y	Y	N	?	?	?	?	?	?	L	?	L

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Minamino1996[271]	N	N	N	?	?	?	?	?	?	?	?	L
Miura1991[272]	Y	N	N	?	L	?	?	?	?	?	L	L
Miura1992[273]	N	N	N	?	L	?	?	?	?	?	L	L
Miura1998[274]	Y	N	N	H	L	?	?	?	?	?	L	L
Mizumura1995[275]	Y	N	N	?	?	?	?	?	?	?	L	L
Mizumura1996[276]	N	N	N	?	?	?	?	?	?	?	L	L
Mizumura1997[277]	Y	N	N	?	?	?	?	?	?	?	?	L
Morgan1999[278]	Y	N	N	?	?	?	?	?	?	?	?	L
Mortensen2006[279]	N	N	N	?	?	?	?	?	?	?	?	L
Mullenheim2001a[280]	N	N	N	?	L	?	?	?	?	?	?	L
Mullenheim2001b[281]	Y	N	N	?	L	?	?	?	?	?	?	L
Mullenheim2001c[282]	Y	N	N	?	L	?	?	?	?	?	?	L
Mullenheim2003[283]	N	N	N	?	?	?	?	?	?	?	?	L
Munch-Ellingsen1997[284]	N	N	N	?	?	?	?	?	?	?	L	L
Munch-Ellingsen1998[285]	N	N	N	?	?	?	?	?	?	?	L	L
Murry1986[286]	Y	N	N	?	?	?	?	?	?	?	L	L
Murry1991[287]	N	N	N	?	?	?	?	?	?	?	H	H
Nadtochiy2009[288]	N	N	N	?	L	?	?	?	?	?	?	L
Nakae2000[289]	N	N	N	?	L	?	?	?	?	?	L	L
Nakano1997[290]	N	N	N	?	L	?	?	?	?	?	?	L
Naumenko2010[291]	Y	N	N	?	?	?	?	?	?	?	?	L
Nawada1997[292]	N	N	N	?	L	?	?	?	?	?	L	L
Neckar2002[293]	N	N	N	?	L	?	?	?	?	?	L	L
Nieszner2002[294]	N	N	N	?	?	?	?	?	?	?	?	L
Nishihara2006[295]	N	N	N	?	L	?	?	?	?	?	?	L
Nithipatikom2006a[296]	N	N	N	H	?	?	?	?	?	?	?	L
Nithipatikom2006b[297]	N	N	N	H	?	?	?	?	?	?	?	L
Node1997[298]	Y	N	N	?	?	?	?	?	?	?	L	L
Nozawa1999[299]	Y	Y	N	?	?	L	?	L	?	L	L	L
Nozawa2003[300]	N	N	N	?	L	?	?	?	?	?	?	L
Okamura1999[301]	Y	N	N	?	L	?	?	?	?	?	?	L
Okubo2000[302]	Y	N	N	?	L	?	?	?	?	?	L	L
Okubo2004a[303]	Y	N	N	?	L	?	?	?	?	?	H	L
Okubo2004b[304]	N	N	N	?	L	?	?	?	?	?	?	L
Ovize1992[305]	Y	N	N	?	?	?	?	?	?	?	L	L
Ovize1995[306]	Y	N	N	?	?	?	?	?	?	?	L	L
Pagel2007[307]	Y	N	N	?	L	?	?	?	?	?	L	L
Patel2001[308]	Y	N	N	?	L	?	?	?	?	?	?	L
Patel2002[309]	Y	N	N	?	L	?	?	?	?	?	?	L
Patel2005[310]	N	N	N	?	L	?	?	?	?	?	L	L
Peart2003[311]	Y	N	N	?	?	?	?	?	?	?	?	L
Pell1998[312]	Y	Y	N	?	L	?	?	?	?	L	?	L
Perricone2013[313]	N	Y	N	?	?	?	?	?	?	L	?	L
Petrischev2006[314]	N	N	N	?	?	?	?	?	?	?	?	L
Ping1999[315]	N	N	N	?	L	?	?	?	?	?	L	L

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Ping2002[316]	N	N	N	?	?	?	?	?	?	?	?	L
Piot1997[317]	Y	N	N	?	?	?	?	?	?	?	?	L
Poulsen2014[318]	N	N	N	?	?	?	?	?	?	?	L	L
Przyklenk1993[319]	Y	Y	N	?	?	?	?	?	?	L	?	L
Przyklenk1995[320]	Y	N	N	?	?	?	?	?	?	?	L	L
Przyklenk1996[321]	Y	Y	N	?	?	?	?	?	?	L	H	H
Przyklenk1997[322]	Y	N	N	?	?	?	?	?	?	?	L	L
Przyklenk2001[323]	Y	N	N	?	?	?	?	?	?	?	?	L
Przyklenk2003[324]	Y	Y	N	?	?	?	?	?	?	L	?	L
Qian1996[325]	Y	N	N	?	?	?	?	?	?	?	?	L
Qian1999[326]	N	N	N	?	L	?	?	?	?	?	?	L
Qiu1997a[327]	N	N	N	?	L	?	?	?	?	?	L	L
Qiu1997b[328]	N	N	Y	?	?	?	?	?	?	?	L	L
Rajesh2003[329]	Y	N	N	?	L	?	?	?	?	?	?	L
Rajesh2004[330]	N	N	N	?	L	?	?	?	?	?	?	L
Raphael2005[331]	Y	N	N	?	?	?	?	?	?	?	L	L
Redel2009[332]	Y	Y	N	?	L	?	?	?	?	L	L	L
Reffelmann2003[333]	Y	N	N	?	L	?	?	?	?	?	?	H
Ren2004[334]	N	N	N	?	?	?	?	?	?	?	L	L
Richard1993[335]	N	N	N	?	L	?	?	?	?	?	?	H
Richard1994[336]	N	N	N	?	?	?	?	?	?	?	?	L
Rioufol1997[337]	Y	N	N	L	?	?	?	?	?	?	L	L
Rivo2006[338]	Y	N	N	?	?	?	?	?	?	?	L	L
Roesner2007[339]	Y	N	N	?	L	?	?	?	?	L	L	L
Roesner2010[340]	N	Y	N	?	L	?	?	?	?	L	L	L
Rohmann1994[341]	N	N	N	?	?	?	?	?	?	?	L	L
Sack1993[342]	N	N	N	?	L	?	?	?	?	?	?	L
Sanada2001a[343]	N	N	N	?	?	?	?	?	?	?	L	L
Sanada2001b[344]	Y	Y	N	?	?	?	?	?	?	L	?	L
Sanada2004[345]	N	N	N	?	?	?	?	?	?	?	L	L
Sandhu1997[346]	N	N	N	?	?	?	?	?	?	?	?	L
Sanz1995[347]	Y	Y	N	?	?	?	?	?	L	L	L	L
Sarkar2012[348]	N	N	N	?	?	?	?	?	?	?	?	L
Sasamori2006[349]	Y	N	N	?	?	?	?	?	?	?	?	L
Sato2007[350]	N	N	N	?	L	?	?	?	?	?	L	L
Sbarouni2006[351]	N	N	N	?	L	?	?	?	?	?	H	L
Schmidt2014[352]	Y	Y	N	?	?	?	?	?	?	L	L	L
Schoemaker2000[353]	N	N	N	?	L	?	?	?	?	?	?	L
Schott1990[354]	Y	N	N	?	L	?	?	?	?	?	L	L
Schultz1995[355]	Y	N	N	?	L	?	?	?	?	?	L	L
Schultz1996[356]	Y	N	N	?	L	?	?	?	?	?	L	L
Schultz1997a[357]	Y	N	N	?	?	?	?	?	?	?	?	L
Schultz1997b[358]	Y	N	N	?	L	?	?	?	?	?	L	L
Schultz1997c[359]	Y	N	N	?	L	?	?	?	?	?	?	H
Schultz1997d[360]	Y	N	N	?	L	?	?	?	?	?	?	H

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Schultz1998a[361]	N	N	N	?	L	?	?	?	?	?	L	L
Schultz1998b[362]	N	N	N	?	L	?	?	?	?	?	L	L
Schultz1998c[363]	N	N	N	?	H	?	?	?	?	?	?	H
Schulz1994[364]	Y	N	N	?	?	?	?	?	?	?	?	L
Schwartz1997[365]	N	N	N	?	?	?	?	?	?	?	L	L
Schwartz2001[366]	N	N	N	?	?	?	?	?	?	?	L	L
Schwartz2002[367]	Y	N	N	?	?	?	?	?	?	?	L	L
Schwarz1997[368]	Y	N	N	?	L	?	?	?	?	?	L	L
Schwarz1998[369]	Y	N	N	?	L	?	?	?	?	?	L	H
Sebbag1996[370]	N	N	N	?	?	?	?	?	?	?	L	L
Shahid2008[371]	Y	Y	N	?	?	?	?	?	?	?	?	L
Shattock1996[372]	N	N	N	?	?	?	?	?	?	?	?	L
Shekarforoush2011[373]	Y	N	N	?	L	?	?	?	?	?	?	L
Sheldrick1999[374]	N	N	N	?	L	?	?	?	?	?	?	L
Shen2008[375]	N	N	N	?	L	?	?	?	?	?	L	L
Shen2013[376]	Y	Y	N	?	L	?	?	?	?	L	L	L
Shinmura2000[377]	N	N	N	?	L	?	?	?	?	?	L	L
Shinmura2002[378]	N	N	N	?	L	?	?	?	?	?	L	L
Shintani2004[379]	N	Y	N	?	?	?	?	?	?	L	L	L
Singh2000[380]	N	N	N	?	?	?	?	?	?	?	?	L
Singh2004[381]	N	N	N	?	?	?	?	?	?	?	?	L
Sivarajah2005[382]	N	N	N	?	L	?	?	?	?	?	L	L
Sivarajah2006[383]	N	N	N	?	L	?	?	?	?	?	H	L
Smits1998[384]	N	N	N	?	?	?	?	?	?	?	L	L
Smul2011[385]	Y	Y	Y	?	L	?	?	?	?	L	L	L
Speechly-Dick1994a[386]	N	N	N	?	L	?	?	?	?	?	L	L
Speechly-Dick1994b[387]	N	N	N	?	L	?	?	?	?	?	?	L
Strohm2000[388]	N	N	N	?	?	?	?	?	?	?	L	L
Su2006[389]	N	N	N	?	?	?	?	?	?	?	?	L
Suzuki1998[390]	Y	N	N	?	L	?	?	?	?	?	H	L
Takano1998a[391]	N	N	N	?	L	?	?	?	?	?	L	H
Takano1998b[392]	N	N	N	?	L	?	?	?	?	?	L	H
Takano2000a[393]	N	N	N	?	L	?	?	?	?	?	L	H
Takano2000b[394]	N	N	N	?	L	?	?	?	?	?	H	L
Takaoka1999[395]	N	N	N	?	L	?	?	?	?	?	L	L
Takasaki1998[396]	N	Y	N	?	L	?	?	?	?	L	L	L
Talukder2010[397]	N	N	N	?	?	?	?	?	?	?	L	L
Tanaka1994a[398]	N	N	N	?	L	?	?	?	?	?	L	L
Tanaka1994b[399]	N	N	N	?	L	?	?	?	?	?	L	L
Tang2004[400]	N	N	N	?	L	?	?	?	?	?	L	L
Tang2005[401]	N	N	N	?	?	?	?	?	?	?	L	L
Tang2006[402]	N	N	N	?	L	?	?	?	?	?	L	L
Tanhehco2000[403]	N	N	N	?	L	?	?	?	?	?	?	L
Tanno2000[404]	Y	N	N	?	L	?	?	?	?	?	?	L
Thornton1990[405]	N	N	N	?	?	?	?	?	?	?	?	L

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Thornton1992[406]	N	N	N	H	?	H	?	?	?	?	L	L
Thornton1993a[407]	N	N	N	H	?	?	?	?	?	?	?	L
Thornton1993b[408]	Y	N	N	?	?	?	?	?	?	?	?	L
Thornton1993c[409]	N	N	N	?	?	?	?	?	?	?	L	L
Tissier2001[410]	Y	N	N	?	L	?	?	?	?	?	L	L
Tissier2002[411]	Y	N	N	?	L	?	?	?	?	?	?	L
Toller1999[412]	Y	N	N	?	?	?	?	?	?	?	L	L
Toombs1993a[413]	N	Y	N	?	?	?	?	?	?	L	?	L
Toufektsian2003[414]	Y	N	N	?	L	?	?	?	?	?	?	L
Toyoda2000[415]	Y	N	N	?	?	?	?	?	?	?	L	L
Tranter2010[416]	N	N	Y	?	?	?	?	?	?	?	?	L
Tsovolas2008[417]	Y	N	N	?	?	?	?	?	?	?	?	L
Tsuchida1992[418]	N	N	N	?	L	?	?	?	?	?	L	L
Tsuchida1994a[419]	Y	N	N	?	?	?	?	?	?	?	L	L
Tsuchida1994b[420]	Y	N	N	?	?	?	?	?	?	?	L	L
Tsuchida1998[421]	Y	N	N	?	L	?	?	?	?	?	L	L
Turan2008[422]	N	N	N	?	?	?	?	?	?	?	?	L
Ueda1999[423]	Y	N	N	?	?	?	?	?	?	?	?	L
Uematsu1998[424]	Y	N	N	?	?	?	?	?	?	?	L	L
Valtchanova2004[425]	N	N	N	?	?	?	?	?	?	?	?	L
Valtchanova-Matchouganska2003[426]	Y	N	N	?	?	?	?	?	?	?	?	L
VandenDoel1998[427]	N	N	N	?	L	?	?	?	?	?	L	L
VanderHeide1994[428]	N	N	N	?	?	?	?	?	?	?	L	L
VanWinkle1994b[429]	N	N	N	?	?	?	?	?	?	?	L	L
VanWylen1994[430]	N	N	N	?	?	?	?	?	?	?	L	L
Vetterlein2006[431]	N	N	N	?	L	?	?	?	?	?	?	L
Vincent2012[432]	Y	N	N	?	?	?	?	?	?	?	?	L
Virag2013[433]	N	N	N	?	?	?	?	?	?	?	?	L
Vladic2011[434]	Y	N	N	?	L	?	?	?	?	?	?	L
Vogt1998[435]	N	N	N	?	L	?	?	?	?	?	L	L
Vogt2001[436]	N	Y	N	?	?	?	?	?	?	?	?	L
Wall1994[437]	Y	N	N	?	?	?	?	?	?	?	?	H
Walsh1994[438]	N	N	N	?	?	?	?	?	?	H	?	L
Wang2001[439]	Y	N	N	?	L	?	?	?	?	?	L	L
Wang2002[440]	Y	N	N	?	L	?	?	?	?	?	L	L
Wang2009[441]	Y	N	N	?	?	?	?	?	?	?	?	L
WangS2004[442]	Y	N	N	?	L	?	?	?	?	?	L	L
WangY2004[443]	N	N	N	?	L	?	?	?	?	?	?	H
Watanabe2006[444]	N	N	N	?	L	?	?	?	?	?	L	L
Weber2005[445]	N	N	N	?	?	?	?	?	?	?	?	H
Weber2008[446]	Y	N	Y	L	?	?	?	?	?	?	?	L
Weinbrenner2002[447]	N	N	N	?	?	?	?	?	?	?	?	L
Weinbrenner2004[448]	N	N	N	?	H	?	?	?	?	?	?	L
Wolfe1993[449]	N	N	N	?	?	?	?	?	?	?	L	L
Wolfrum2002[450]	Y	N	N	?	L	?	?	?	?	?	?	L

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Wolfrum2005[451]	Y	N	N	?	?	?	?	?	?	?	?	L
Wong2010[452]	N	N	Y	?	L	?	?	?	?	?	L	L
Wong2012[453]	N	N	Y	?	L	?	?	?	?	?	?	L
Wu2001[454]	Y	N	N	?	L	?	?	?	?	?	L	L
Wu2008a[455]	Y	N	N	?	L	?	?	?	?	?	?	L
Wu2008b[456]	Y	N	N	?	L	?	?	?	?	?	?	L
Wu2009[457]	Y	N	N	?	L	?	?	?	?	?	?	L
Wu2011[458]	Y	N	N	?	L	?	?	?	?	?	?	L
Wu2013[459]	Y	N	N	?	?	?	?	?	?	?	L	H
Xiang2011[460]	Y	Y	N	?	?	?	?	?	?	L	?	L
Xiao2001[461]	Y	N	N	?	?	?	?	?	?	?	?	L
Xiong2011[462]	Y	Y	Y	?	?	?	?	?	?	L	L	L
Xu2001[463]	Y	N	N	?	?	?	?	?	?	?	L	L
Xu2002[464]	N	Y	N	?	?	?	?	?	?	L	?	L
Xu2006[465]	Y	N	N	?	?	?	?	?	?	?	L	L
Xu2010[466]	Y	N	N	?	?	?	?	?	?	?	L	L
Xu2013[467]	Y	N	N	?	?	?	?	?	?	?	L	L
Xuan2007[468]	N	N	N	?	?	?	?	?	?	?	?	L
Yada2006[469]	N	N	N	?	?	?	?	?	?	?	?	L
Yamada2002[470]	N	N	N	?	L	?	?	?	?	?	L	L
Yamasaki1997[471]	Y	N	N	?	L	?	?	?	?	?	L	L
Yamasaki2000[472]	N	N	N	?	L	?	?	?	?	?	L	L
Yamashita1998[473]	N	N	N	?	L	?	?	?	?	?	?	L
Yamashita2000[474]	N	N	N	?	L	?	?	?	?	?	L	L
Yang1993[475]	N	N	N	?	?	?	?	?	?	?	L	L
Yang1996[476]	Y	N	N	H	?	?	?	?	?	?	L	L
Yang2006[477]	Y	N	N	?	?	?	?	?	?	?	L	L
Yang2010[478]	N	N	N	?	L	?	?	?	?	?	L	L
Yang2011[479]	Y	N	N	?	?	?	?	?	?	?	L	L
YangX2013[480]	N	Y	N	?	L	?	?	?	?	L	?	L
YangZ2013[481]	N	N	N	?	?	?	?	?	?	?	?	L
Yao1993a[482]	Y	N	N	?	?	?	?	?	?	?	L	L
Yao1993b[483]	Y	N	N	?	?	?	?	?	?	?	L	L
Yao1994a[484]	Y	N	N	?	?	?	?	?	?	?	L	L
Yao1994b[485]	N	N	N	?	?	?	?	?	?	?	L	L
Yao1997[486]	Y	N	N	?	?	?	?	?	?	?	L	L
Yellon1992[487]	N	N	N	H	L	?	?	?	?	?	L	L
Yorozuya2004[488]	Y	Y	N	?	L	?	?	?	?	L	L	L
Ytrehus1994[489]	N	N	N	?	?	?	?	?	?	?	?	L
Yu2007[490]	Y	N	N	?	?	?	?	?	?	?	?	H
Yu2010[491]	Y	N	N	?	?	?	?	?	?	?	?	L
Yu2011[492]	N	N	N	?	L	?	?	?	?	?	H	L
Zacharowski2007[493]	N	Y	N	?	L	?	?	?	?	L	L	L
Zhang2004[494]	Y	N	N	?	?	?	?	?	?	?	L	H
Zhang2010[495]	N	N	N	?	?	?	?	?	?	?	?	L

study	reporting - randomization	reporting - blinding	reporting - powercalculation	bias - random group allocation	bias - groups similar at baseline	bias - blinded group allocation	bias - random housing	bias - blind intervention	bias - random outcome assessment	bias - blind outcome assessment	bias - reporting of drop-outs	bias - other
ZhangS2006[496]	N	N	N	?	?	?	?	?	?	?	?	L
ZhangX2006[497]	Y	N	N	?	?	?	?	?	?	?	L	L
Zhao2003[498]	Y	N	N	?	?	?	?	?	?	?	?	H
Zhao2012[499]	N	N	N	?	?	?	?	?	?	?	?	L
Zhu2007[500]	N	Y	N	?	?	?	?	?	?	L	?	L
Zhu2009[501]	Y	N	N	?	L	?	?	?	?	?	?	L
Zhu2011[502]	Y	N	N	?	L	?	?	?	?	?	?	H
Zhu2013[503]	Y	Y	N	?	L	?	?	?	?	L	?	L

Meta-analysis includes data from 785 independent comparisons identified from 503 studies. Y = yes, N = not reported, ? = unclear risk of bias, L = low risk of bias, H = high risk of bias.

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Supplemental table C - Meta-analysis study quality

	# pub	# comp	(%)	MD	[95%CI]
all (T^2 164.4, I^2 94.7%)	503	785	(100)	24.6	[23.5, 25.6]
reported randomization					
P>0.11, adj. R^2 = 0.42%					
not reported	258	420	(54)	25.3	[24.0, 26.7]
yes	245	365	(47)	23.7	[21.7, 25.7]
rodents					
P>0.98, adj. R^2 = -0.33%					
not reported	198	200	(58)	26.8	[24.9, 28.7]
yes	185	144	(42)	26.8	[24.9, 28.7]
non-rodents					
P>0.10, adj. R^2 = 0.80%					
not reported	60	220	(50)	23.9	[22.0, 25.8]
yes	60	221	(50)	21.7	[19.8, 23.6]
reported blinding					
P>0.69, adj. R^2 = -0.15%					
not reported	447	707	(90)	24.5	[23.5, 25.5]
yes	56	78	(10)	25.2	[21.9, 28.5]
rodents					
P>0.43, adj. R^2 = -0.03%					
not reported	345	315	(92)	27.0	[25.4, 28.5]
yes	38	29	(8)	24.9	[23.3, 26.4]
non-rodents					
P>0.17, adj. R^2 = 0.21%					
not reported	102	392	(89)	22.4	[21.0, 23.8]
yes	18	49	(11)	25.3	[23.9, 26.7]
random group allocation (selection bias)					
P>0.92, adj. R^2 = -0.28%					
high	11	14	(2)	23.2	[16.0, 30.3]
low	10	11	(1)	25.0	[13.9, 36.0]
unclear	482	760	(97)	24.6	[17.4, 31.8]
groups similar at baseline (selection bias)					
P>0.01, adj. R^2 = 1.24%					
high	5	8	(1)	27.1	[17.4, 36.8]
low	207	344	(44)	26.2	[16.4, 36.0]
unclear	291	433	(55)	23.2	[13.5, 33.0]
blinded group allocation (selection bias)					
not analyzed					
high	2	2	(0.3)	30.5	[11.6, 49.4]
low	1	1	(0.1)	16.2	[-18.1, 50.5]
unclear	500	782	(99)	24.6	[5.6, 43.5]

Supplemental table C (continued) - Meta-analysis study quality

	# pub	# comp	(%)	MD	[95%CI]
random housing (performance bias)					
not analyzed					
high	1	1	(0.1)	31.0	[4.8, 57.2]
low	0	0	(0)	NA	[NA]
unclear	502	784	(99)	24.6	[-1.6, 50.8]
blind intervention (performance bias)					
not analyzed					
high	2	2	(0.3)	30.4	[10.6, 50.3]
low	3	3	(0.4)	27.1	[0.8, 53.3]
unclear	498	780	(99)	24.5	[4.7, 44.4]
random outcome assessment (detection bias)					
not analyzed					
high	1	1	(0.1)	31.0	[4.8, 57.2]
low	1	1	(0.1)	17.1	[-21.3, 55.5]
unclear	501	783	(99)	24.6	[-1.7, 50.8]
blind outcome assessment (detection bias)					
P>0.87, adj. R^2 = -0.28%					
high	2	2	(0.3)	29.5	[10.9, 48.1]
low	40	52	(7)	24.6	[5.6, 43.6]
unclear	461	731	(93)	24.5	[6.0, 43.1]
reporting of drop-outs (attrition bias)					
P>0.01, adj. R^2 = 1.29%					
high	27	42	(5)	24.4	[20.3, 28.5]
low	226	340	(43)	22.9	[18.5, 27.3]
unclear	250	403	(51)	26.0	[21.7, 30.4]

Total # comparisons = 8, corrected P<0.006; pub = publications, comp = comparisons, NA = not applicable, adj. = adjusted, MD = weighted difference in means, RoB = risk of bias, ass. = assessment.

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